

**Feel the power** Power-over-Ethernet technology is catching on among VoIP and Wi-Fi customers. **PAGE 17.**



**Reference check** IT executives, such as Jay Wessel, discuss the pros and cons of being a vendor reference. **PAGE 43.**

# NetworkWorld

The leader in network knowledge ■ [www.nwfusion.com](http://www.nwfusion.com)

November 24, 2003 ■ Volume 20, Number 47

## 2003 holiday gift guide

Our testing elves have gone high-tech this year to bring you the coolest and best gear for the holidays. With more than 120 products in print and online, there's something for everyone on your gift list.

—Keith Shaw  
Senior Reviews Elf

The fun starts on **Page 36**, and continues online at [www.nwfusion.com](http://www.nwfusion.com), DocFinder: 8632.

## Cisco's security plan eyed warily

■ BY PHIL HOCHMUTH AND ELLEN MESSMER

Cisco says its road map for tying leading anti-virus software to its network hardware promises to eventually transform every WAN, LAN and Wi-Fi port into a security checkpoint. But the technology — not available until the middle of next year — raises questions about management complexity and the issue of locking users into a single-vendor architecture, observers say.

The company last week unveiled the Cisco Network Admission Control program (CNAC), a strategic push to adapt its routers and then its switches to be able to automatically block Windows-based desktops from accessing the network if they don't have current operating system or virus updates. The ability to do security-policy enforcement

See Security, page 16



AP PHOTO/DANIEL ACKER

“A busy systems administrator used to have days to respond to a threat, and now it's only minutes or even a second.”

John Chambers, CEO, Cisco

■ InfoExpress aims to protect LANs from infected laptops. Page 17.

## Security of handhelds far too lax, experts say

■ BY JOHN COX AND DENISE DUBIE

LAS VEGAS — Traversing the carpeted walkways of the Las Vegas Convention Center last week, Caleb Sima looked like many other programmers at Comdex: young, lean, laid-back and with a taste for earth tones.

What was less apparent is that he also has a penchant for uncovering new security threats.

“I dabble in cell phone security for fun,” said the CTO and co-founder of Spi Dynamics, an Atlanta company that makes software for uncovering vulnerabili-

ties in Web applications. Sima spoke on a panel about the growing handheld security threat, a hot topic at a conference where dozens of mobile network products were on display.

What Sima said he has learned dabbling with cell phone security is that no one — not software

See Comdex, page 12

## COMDEX

LAS VEGAS 2003

Comdex may be smaller, but show organizers insist all signs point to a bright future. Page 12.

**In-Site** Lessons from leading users  
CompUSA

## As a buyer, retailer goes leading edge

■ BY PHIL HOCHMUTH

Electronics retailer CompUSA is popular among seekers of high-tech upgrades, whether for superfast PCs, photo-quality printers or the latest games.

When it came time for CompUSA to upgrade the network supporting its 230 U.S. stores, the No. 2 consumer electronics retailer reached for some leading-edge technologies for its own use:

See CompUSA, page 14

Cool  
Yule  
Tools



Not printing reports as usual.

Not printing forms as usual.

Not settling for the usual as usual.

Not business as usual.

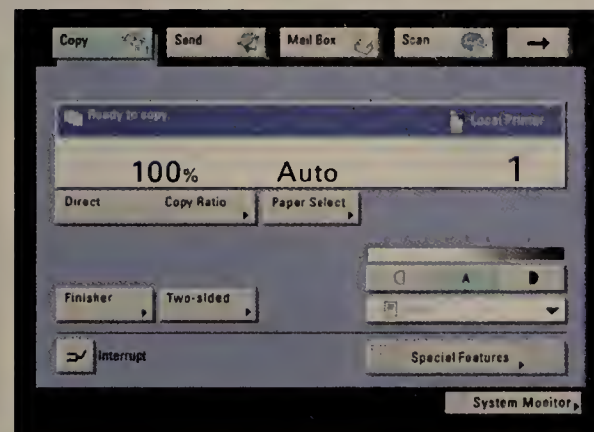




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\*Based on 2003 Security Technology Leadership Awards—The SANS Institute.



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## Cool Yule Tools

### Network World 2003 holiday gift guide

Our testing elves have been busy this year, checking out more than 120 of the coolest Yule tools. Our gift bag includes everything from a 30-inch widescreen monitor to a camera the size of a credit card. **Page 36.**



## NetworkWorld Fusion

[www.nwfusion.com](http://www.nwfusion.com)

## Interactive

### Tester's Choice: Dumb defaults

We call on security vendors — Cisco in particular — to fix default settings that leave users subject to attack. What do you think? Share your thoughts in our forum. **DocFinder: 8636**

### New standards page

The nice thing about standards is how many of them there are, right? Keep up with all the standards work out there with our new Standards page. **DocFinder: 7628**

### News the way you want it

Track just the technologies, companies and authors you're interested in. We've now got more than different 60 RSS feeds. **DocFinder: 7442**

## Seminars and events

### Is your data center fully metered, fully accountable and fully effective?

Learn the latest strategies and get the practical applications at The New Data Center: Powering the Enterprise, a new Network World Technology Tour event for professionals who want to put the power of good ideas to work. Free to qualified registrants. **DocFinder: 8542**

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## Columnists

### Compendium

Stopping spam at home  
Fusion Executive Editor Adam Gaffin takes a tip from fellow columnist Steve Blass and installs POPFile to keep the peace at home. See how it worked. **DocFinder: 8637**

### Cool Tools Daily Dose

Inside Comdex  
Senior Reviews Editor and Cool Tools columnist Keith Shaw gives you the inside scoop from the show floor and vendor meetings at last week's show. See what new products are on the horizon and worth your time. **DocFinder: 8638**

### Telework Beat

More SOHO storage choices  
Net.Worker Managing Editor Toni Kistner hits Comdex, where Buffalo, Triton and Iomega debut products. **DocFinder: 8639**

### Small Business Tech

Triton does convergence right  
James Gaskin says Triton's ASAP device bundles NAS, broadband router, switch and security. **DocFinder: 8640**

### Breaking News

Exclusive up-to-date news every day. **DocFinder: 6342**

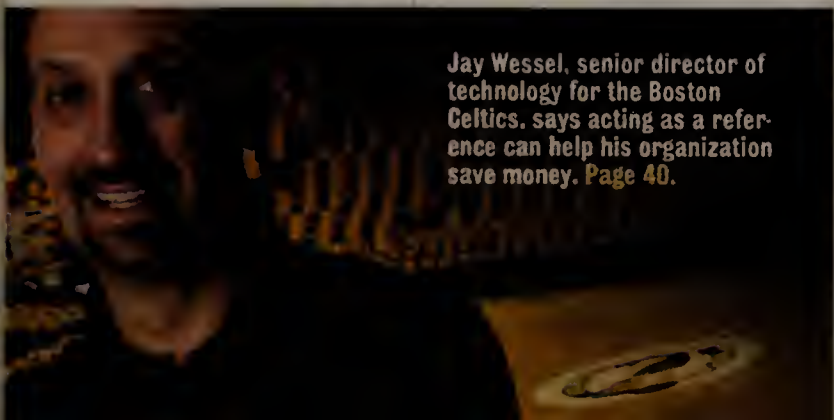
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Jay Wessel, senior director of technology for the Boston Celtics, says acting as a reference can help his organization save money. **Page 40.**





News

## Bits

## Number portability in question?

■ As *Network World* went to press late last week, the long-awaited advent of wireless number and wireline-to-wireless portability was still on track to begin today, despite last-minute attempts to halt the process. Last Thursday the FCC rejected a request filed two days earlier by the United States Telecom Association to delay wireline-to-wireless portability. The association also filed a petition with the U.S. Court of Appeals for the D.C. Circuit to review the FCC's order. The industry group says the FCC's rules are unfair and that the commission does not have the consumer's best interest in mind. The filing also criticized the FCC for mandating wireline-to-wireless number portability, which will allow users to port their landline numbers to their wireless phones. That ruling came on Nov. 10, two weeks before the FCC's Nov. 24 deadline.

## Sun eyes open source; acquires Waveset

■ Sun is developing a plan to offer versions of its application server and Web server under an open source license, Jonathan Schwartz, the company's executive vice president for software, said last week. The move could help proliferate the use of Sun's Java server software by making it more attractive to developers, some of whom like the freedom to view and modify software code that an open source license provides. Sun isn't disclosing a timetable for its plan, but it's exploring what type of open source license would be the most suitable to offer, Schwartz said. Sun last week also announced it is acquiring management software vendor Waveset Technologies for an undisclosed price. Sun says Waveset's Lighthouse suite of products has capabilities, such as user provisioning, not found in Sun's identity management software. Sun says it intends to integrate some portion of Waveset's software suite into its portal server and identity management products.

## SCO, Novell swap more charges

■ SCO Group CEO Darl McBride is incorrect in his contention that his company has a non-compete agreement with Novell that would be violated if Novell completes a planned acquisition of SuSe Linux, Novell said last week. "Mr. McBride's characterization of the agreements between Novell and SCO is inaccurate," Novell said in a statement. "There is no non-compete provision in those contracts, and the pending acquisition of SuSe Linux does not violate any agreement between Novell and SCO," McBride said in an interview this week that the \$210 million SuSe Linux acquisition would infringe on an agreement Novell signed with The Santa Cruz Operation (now SCO) when Novell sold the rights to its Unix System V software in 1995. SCO bought The Santa Cruz Operation's Unix business in 2000, acquiring with the technology the non-compete agreement, McBride said. He said SCO won't pursue action against Novell until Novell closes the SuSe deal.

## COMPENDIUM

## Evil spammers

Webloggers have begun trying to fight off spammers, but Mark Pilgrim warns that's a dangerous battle. "They'll own a million Windows boxes and direct them all at your server. They'll track you down, find your Social Security number and date of birth, steal your identity, and ruin you personally." Read more of the evil details at [www.nwfusion.com](http://www.nwfusion.com), DocFinder: 8645.

## ■ The Good The Bad The Ugly



**On the job.** Although job losses continue to hit the U.S. technology sector, the rate of the employment decline is slowing, according to an annual study by the American Electronics Association. The study shows that employment in the U.S. high-tech industry dropped 8% last year to 6 million, from 6.5 million in 2001. In 2003, the loss is likely to be 234,000 jobs, or a 4% decline, the Santa Clara association says.



**The price of outsourcing.** Nearly one in five companies that outsource IT functions fails to save any money, according to a recent survey of 76 IT organizations by People3. In fact, nearly one in 10 of those surveyed said their costs actually rose after outsourcing.



**Time to get a cell phone.** A man in East St. Louis, Ill., last week managed to get a middle finger stuck in a pay phone coin return slot while trying to retrieve 50 cents. Repeated attempts to free him failed, resulting in an emergency room visit for both the man and phone, which rescue workers dislodged, according to the Associated Press. Doctors freed the man's finger. . . . No word on whether he got the coins back. ➤



## Lawmaker says tighten security . . . or else

■ U.S. companies need to work together to improve their cybersecurity before a major cyberattack prompts Congress to pass hasty legislation, the chairman of a cybersecurity-focused U.S. House subcommittee told IT industry leaders last week. Rep. Adam Putnam, chairman of the House Committee on Government Reform's Subcommittee on Technology, Information Policy Intergovernmental Relations and the Census, decided this month not to introduce a bill that would require public companies to report their cybersecurity initiatives to the U.S. Securities and Exchange Commission. "A hell of a lot of negative feedback" over the proposed bill forced Putnam (R-Fla.) to reconsider the legislation, he said. IT security experts objected to the proposal during a discussion on government's role in cybersecurity sponsored by the Center for Strategic and International Studies in Washington, D.C. However, Putnam warned IT company leaders that any private sector efforts to build consensus on cybersecurity best practices might be washed aside by Congress if there is a major cyberattack on U.S. infrastructure.

## Polycom snaps up Voyant

■ Conferencing provider Polycom has agreed to pay about \$100 million for Voyant Technologies, a privately held company that develops voice communications products and services. Polycom says the deal will enable it to strengthen the voice offerings of Polycom Office, which provides companies integrated voice, video, data and Web communications. Furthermore, Polycom says it plans to bank on Voyant's relationships with service providers such as Verizon and WebEx to gain better partnerships with the companies. Polycom has a history of strengthening itself through acquisitions, such as when it purchased rival PictureTel in 2001 and network equipment maker Accord Networks in 2000 to fill gaps in its voice, data and video collaboration products.





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*With stellar 10G Ethernet sales to date and a new high-density 10G switch in the works, Extreme Networks® is poised for the 10G explosion.*



## The Extreme Networks BlackDiamond:

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**The University of Warwick in the U.K.** uses it to support 100Mbps connections to 5,300 student rooms, enabling transfer of e-learning applications and associated multimedia materials. Liberty Medical Supply uses it to connect three sites with fiber, enabling the company to support interactive applications and storage-area network traffic. Hancock Telecom, a local exchange carrier in Indiana, uses it to deploy high-speed Ethernet services to customer homes.

Three organizations with very different requirements, but one thing in common: They needed 10G Ethernet, and they got it from Extreme Networks.

These organizations are far from alone. Customers are finding Extreme Networks' BlackDiamond® switch provides a reliable, ultra-high bandwidth foundation for 10G Ethernet, enabling them to support advanced applications, including convergence of data with voice and video, high-speed storage and enterprise resource planning software.

"As more devices come on to customer networks, driving up traffic levels, the pressure to implement 10G is really starting to ramp up," says Ameet Dhillon, senior product manager for BlackDiamond with Extreme Networks. "At the same time, 10G per-port prices are coming down, particularly since we introduced XENPAK pluggable optics."

### The Extreme Advantage

One of the reasons BlackDiamond is so adept at handling 10G Ethernet is Extreme's implementation of quality-of-service (QoS) features. QoS enables customers to differentiate among the various types of traffic flowing through their networks, giving preferential treatment to delay-sensitive traffic such as voice and video, for example. With many vendors' implementations, turning on QoS means taking a dramatic performance hit, but that is simply not the case with BlackDiamond. In fact, with QoS turned on, BlackDiamond handled Network Computing's "most rigorous tests" without dropping a single packet, earning an Editor's Choice award and the publication's

annual Well-Connected award in the 10Gigabit Switch category.

Another Extreme differentiator is the fact that it uses the same ASIC technology and operating system across its three switch families: Summit, Alpine and BlackDiamond, which address edge, aggregation and core requirements, respectively. The approach dramatically simplifies network operations because once you learn how to use one platform, you know them all. That, in turn, reduces total cost of ownership (TCO).

A number of other standard Extreme features help reduce TCO, including the BlackDiamond's use of a centralized engine for providing Multi-Protocol Label Switching (MPLS). That enables any port connected to the switch to be instantly MPLS-enabled, including 10G Ethernet ports, at no extra cost. Similarly, for more than two years, all Extreme switches have been IPv6-enabled, an issue that federal government users and contractors are now following closely. "The Extreme approach provides future proofing, on top of cost savings," Dhillon says.

### Building for the Future

To keep up with customer requirements, Extreme has announced plans to deliver a higher density 10G platform. Code-named Mariner and due out by the end of 2003, the switch will offer up to 48 10G Ethernet ports, 480 Gigabit Ethernet ports or a mix of the two—the highest density in the industry. BlackDiamond, with its 10G interface capability, will be complementary to Code-named Mariner, able to feed traffic to the high-density core switch.

Mariner will cross a new cost threshold with respect to 10G Ethernet,

with per-port prices expected to be in the \$8,000 range. With pricing for the BlackDiamond G16Xi Gigabit Ethernet module at about \$1,300 per port, that means we are about to cross the point where the price per port for 10G is less than the cost of 10 ports of Gigabit Ethernet.

The price break comes at an opportune time for customers, who continue to add more traffic to their networks from all kinds of new sources. Various wireless devices are now attaching to corporate networks, ranging from the traditional, such as PDAs and laptops, to the not-so-traditional, such as RF tags that monitor the whereabouts of goods in a warehouse. Companies are also adding traffic from building management systems that collect data from heating systems, door locks, light switches and the like, as well as feeds from video surveillance cameras, all of which give new meaning to the term "convergence."

At the same time, most servers and many desktops and laptops now ship with Gigabit Ethernet support built-in. As the number of users with these computer systems reaches critical mass, users will demand Gigabit Ethernet connections to their desktops, a move that promises to boost performance significantly. In a recent test, Competitive Systems Analysis, Inc., a consulting firm in Wellington, Fla., found that ordinary office applications increased in performance between 35% and 40% when run over Gigabit Ethernet instead of Fast Ethernet, while database transactions saw a 30% to 47% performance boost. Higher speeds at the edge will mean greater bandwidth demands in the core—and 10G Ethernet is the answer.

Learn more about Extreme Networks 10G Ethernet solutions: Visit <http://www.extremenetworks.com/go/bd.htm>



# Siemens scales up its IP PBX

■ BY PHIL HOCHMUTH

Siemens this week is expected to launch a new version of its flagship IP PBX, boasting higher capacity, better sound quality, and improved failover and reliability features.

The HiPath 4000 Version 2.0 triples the maximum number of users on an IP PBX to 12,000, up from 4,000 on the previous version. It can support IP phones, TDM handsets or a combination of the two. A new distributed call-processing architecture lets remote office IP PBXs in a HiPath 4000 system take over as the main call-control node in the event of a hardware or software failure on the main HiPath box.

The company also is launching the OptiPoint 410 IP phone. The phone employs a voice-over-IP (VoIP) coder/decoder that delivers higher-quality voice than traditional TDM phone systems, according to the company (see story, right). The phones can be loaded with a Session Initiation Protocol stack or Siemens' proprietary VoIP protocol, and support 802.3af power over Ethernet.

Version 2.0 of the HiPath 4000 IP PBX is built on a new compact PCI (cPCI) chassis, a 19-inch rack-mount enclosure used in carrier telecom equipment, as opposed to the 30-inch chassis that the previous version used.

Processor blades can be inserted into the chassis to support IP, TDM or a mix of endpoints. Up to nine HiPath 4000s can be networked to provide a single system, with support for up to 100,000 endpoints.

Siemens also is announcing a remote office system, the Access Point 3700. Also a cPCI chassis, the AP 3700 would sit in a branch office and provide call control for TDM or IP handsets, and link back to a HiPath 4000 at the main site via an IP WAN.

The HiPath 4000 runs Siemens' ComScendo software on top of an embedded Unix operating system. The ComScendo software provides call control (via Siemens' proprietary CorNet IP protocol) features and system management functions. The IP PBX also runs a quality-of-service monitoring function that measures latency across a WAN. This

can let a HiPath 4000 switch trunk lines over to a TDM, or a back-up IP network if WAN congestion exceeds a user-determined level, or fails completely.

The HiPath 4000 and AP 3700s also can back up each other during hardware failures. If the central-office HiPath 4000 is unavailable, centralized call control across the network can fail over to an AP 3700 in one of the branches. Calls would be temporarily routed and processed through the branch-office IP PBX until the main-site HiPath was brought back up. HiPath 4000 chassis also can be fitted with a back-up call-processor blade for an extra layer of redundancy.

The University of Texas Southwestern Medical Center in Dallas runs a HiPath 4000. The facility, which occupies a dozen buildings across a two-mile campus, is replacing an old Rolm 9000 PBX (Siemens bought Rolm from IBM in 1992). This requires a mix of TDM and IP as the Rolm PBX is phased out and the HiPath phased in, says Elwyn Hull, telecommunications director at Southwestern Medical Center.

## Siemens clears up G.722

Siemens' new OptiPoint 410 IP phone uses the International Telecommunications Union standard G.722 codec for voice digitization and compression. G.722 has a compression rate of 48K bit/sec, while most IP telephony gear on the market uses the uncompressed G.711 codec (64K bit/sec) or the G.729 codec, which transmits at 8K bit/sec. According to Siemens, G.711 and G.729 VoIP phones, as well as most standard TDM voice systems, transmit as 3.3-KHz narrowband voice signals, while the G.722 codec transmits as 7-KHz wideband. Siemens says the broader bandwidth helps improve the clarity of phone conversations.

— Phil Hochmuth

The Rolm-to-Siemens migration will take about five years, as the medical center's 10,000 doctors, nurses and staff are shifted from TDM to IP. Hull says this large window of time was necessary as the center upgrades its network to be VoIP ready. Currently, 600 users are on TDM HiPath phones, and about 150 in two remote offices are on OptiPoint IP phones.

Hull says he chose the HiPath 4000 for the VoIP migration because of its ability to scale and to

mix TDM and IP. "Our clinics are critical areas," Hull says. "We have faith in [VoIP], but we're just not comfortable with running pure IP in there yet." Siemens also was the only vendor that could integrate features from the Rolm PBX across the HiPath box, he adds.

The Siemens HiPath 4000 competes with IP PBXs such as 3Com's VCX enterprise softswitch, Alcatel's OmniPCX Enterprise, Avaya's S8700 MultiVantage platform, Cisco's CallManager and Nortel's Succession IP PBX platform.

The HiPath 4000 Version 2.0, AP 3700 and the new OptiPoint 410 phones are expected to be available in the first quarter of next year. Pricing is expected to be about \$140 for the OptiPoint phones, and about \$400 per line on the HiPath 4000. Voice mail systems, unified messaging and other applications will be available separately. ■

# Veritas, Cisco aim to consolidate SANs

■ BY JENNIFER MEARS

Veritas is teaming with Cisco to provide businesses with a centralized point of control to make it easier to consolidate isolated storage-area networks and create virtual pools of storage resources.

The companies this week are expected to announce the general availability of Veritas Storage Foundation for Networks on the Cisco MDS 9000 series of switches. Veritas specializes in software that lets storage administrators manage and provision resources across heterogeneous environments. Typically, volume management and storage virtualization is done at the host level, but Veritas Storage Foundation for Networks is for managing and provisioning resources at the network level.

Putting management into the network switch enables administrators to manage data across SANs built around specific applications and operating systems, says Ed Chapman, senior director of product management for Cisco's storage technology group.

"By having intelligence built into the network layer as well as having the ability to manage it with what they do from a host-based perspective, customers can easily move from managing silos of storage to managing their storage across different vendors,"

Chapman says.

That means users can get more out of the storage resources they have by more easily moving data from host to host. At the same time, management headaches are reduced because SAN islands no longer have to be managed independently.

Veritas Storage Foundation for Networks is licensed starting at \$1,000 per port for the enterprise version.

### Microsoft steps up

In other storage news, Microsoft last week gave the newly ratified iSCSI storage transport protocol a boost when the company announced that it was certifying hardware designed to interoperate with Windows environments. Microsoft says 14 hardware vendors, including Cisco, Intel and Network Appliance, have been certified.

Also, this week HP is expected to fill out its

### Onboard

Microsoft says iSCSI hardware from these vendors interoperates with Windows:

- Adaptec
- Advanced Digital Information
- ATTO Technology
- Cisco
- Crossroads Systems
- EqualLogic
- Intel
- Intransa
- LeftHand Networks
- McData
- Network Appliance
- Qlogic
- Spectra Logic
- Storageconnections.net

storage line with a family of low-cost products aimed at small and midsize businesses, as well as for enterprise workgroups and remote offices.

The StorageWorks Modular Smart Array products, which range from \$3,200 to about \$10,000, are designed to integrate with HP's ProLiant servers. The offerings include two direct-attached products and an entry-level SAN array that HP says provides an easy migration to network-based storage by enabling users to migrate drives from a direct-attached infrastructure to the SAN enclosure.

In addition, HP says it will unveil two prepackaged integrated storage and server offerings, which start at \$10,000, and storage starter kits, which start at \$5,000. These are all designed to make it easier for remote offices and small businesses with little IT support to get shared storage up and running. ■



### THIS WEEK'S QUESTION:

What's the name of the software company employing Keanu Reeve's character, Thomas Anderson, in the movie "The Matrix"?

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# Legislator raises RFID privacy flag

■ BY ANN BEDNARZ

The privacy debate over wireless inventory devices based on radio frequency identification technology took a legislative turn last week in the California Senate.

Sen. Debra Bowen, chairwoman of California's Senate Subcommittee on New Technologies, held a hearing to discuss RFID technology and its associated privacy issues. Representatives from standards bodies EPCglobal and the Grocery Manufacturers of America were among the participants.

Bowen singled out a few parties that declined to participate in the hearing, including Wal-Mart, which is requiring its suppliers to tag shipping cases and pallets with RFID technology by 2006.

"It's disappointing that some of America's biggest companies that want to use RFID technology and potentially invade the privacy of shoppers can't seem to find Sacramento on a map to come talk about it," Bowen said in a statement. "If and when I opt to get the ball rolling to put some standards and safeguards in place on how RFID technology can be used, Wal-Mart, Procter & Gamble and the International Mass Retail Association won't have any trouble finding their voice."

News of retailers and manufacturers that are working to deploy RFID technology has created a firestorm of controversy about the technology's potential for tracking consumer buying habits.

Privacy advocates fear RFID-

tagged merchandise will give marketers broad tools for monitoring people's behavior — and their whereabouts. Information on the California Senate Web site says businesses could label all their goods with RFID tags, "allowing RFID antennas anywhere to scan the contents of people's purses, wallets, shopping bags, not to mention identifying the makers of the clothes, jewelry and shoes they're wearing."

RFID supporters dispute claims that the transmitters would let unauthorized parties identify and track customers, citing technology limitations such as the short range of RFID readers. In addition, RFID tags contain only an item identification number, called an electronic product code

(EPC), not private consumer or payment information.

Jack Grasso, director of public relations for EPCglobal, said the standards body is committed to establishing, monitoring and maintaining RFID privacy guidelines. "Nothing is of higher priority than the issue of consumer privacy and protection," Grasso said.

Tempers flared this summer when Wal-Mart and Procter & Gamble tested RFID tags on lipstick sold at a Wal-Mart store in Arrow, Okla. Shelves equipped with Webcams reportedly allowed

Procter & Gamble researchers in Cincinnati to watch customers as they picked up the lipsticks. Likewise, a plan earlier this year by Italian apparel maker Benetton to add RFID tags to clothing items sparked an Internet-energized boycott.

Participants in the California hearing agreed that RFID privacy guidelines are necessary, such as building a "tag-kill" deactivation command into RFID systems; notifying users that electronic tags are present; and giving consumers the option to render a chip nonfunctional. ■

## Tool gives police look at trends

■ BY ANN BEDNARZ

Software being piloted by the San Francisco Police Department will let officers graphically track and analyze crime trends such as the frequency of drug arrests near schools or a rash of auto thefts in a particular neighborhood.

San Francisco officials last week previewed the software, called Crime Mapping and Analysis for Public Safety (CrimeMAPS). The system culls information from city systems, including the police department's record-management system — which stores arrest and incident reports officers file — and the city's 911 call center. The software then correlates that information with geographic reference data such as congressional districts, addresses and redevelopment zones.

Police officers and analysts will be able to run queries based on search factors such as time period, type of crime, neighborhood and distance from schools or parks, says Erich Seamon, GIS manager for the City and County of San Francisco. The information will be transmitted over the city's secure high-speed fiber network, he says. "The only way that someone can get access to the system is to sit at a machine that has been designated for a public safety official," Seamon says.

San Francisco's Department of Telecommunications and Information Services (DTIS) built CrimeMAPS with a \$1.5 million grant from the U.S. Department of Justice. Among U.S. municipalities, San Francisco is a pioneer in geographic information systems (GIS). The city has worked with GIS technologies since 1992 and over the past two years, DTIS has been developing an Enterprise GIS program.

The CrimeMAPS system consists of two Windows



San Francisco's CrimeMAPS software displays the density of car accidents occurring in the city since January.

2000 servers running Microsoft Active Directory, IBM's DB2 database technology and spatial data applications from the ESRI. The geographic data is maintained in a storage-area network built with EMC products, Seamon says. Terminal emulation software from Citrix pushes the application out to desktop clients for heavy-duty analysis; lighter use requires only a Web browser, he says.

At this point CrimeMAPS is not a real-time source of crime-analysis information; it's updated daily with fresh data from the 911 call-center systems and the police department's records-management system, Seamon says. The city plans to upgrade the police department's records management system, which will enable a more real-time transactional process.

Mobile access also is being considered.

"There is the possibility of pushing this out over a secure Wi-Fi network" to patrol cars if DTIS can adequately address security concerns, Seamon says. "We're not doing it now, but we're looking to do that in the next six months to a year." ■

## SBC offers integrated IP messaging service

■ BY JIM DUFFY

The same week that SBC's CFO proclaimed voice-over-IP a business threat, the carrier unveiled its own managed voice-over-IP service.

SBC last week unveiled SBC PremierSERV Hosted IP Communication Service (HIPCS), which is available in 18 metropolitan areas. The service rollout follows recent regulatory approval for SBC to offer long-distance in all 50 U.S. states, and the company plans to increase coverage to 30 metropolitan areas by year-end.

HIPCS includes unified messaging, in which voice mail and e-mail can be consolidated into one in-box, and voice mail can be forwarded like e-mail. It includes "find me, follow me," which lets employees forward calls to a mobile phone, remote office or another extension.

HIPCS's "click to call" feature enables one-click calling from call logs or directories on a phone set or Web browser. The service's conferencing capability lets users schedule conference calls from a browser.

The "plug and play" feature of HIPCS lets users plug in their IP devices, including IP-enabled phones, from anywhere into a network, letting them use their office number when traveling or working from the road.

Despite the service launch, SBC CFO Randall Stephenson last week told attendees at a financial company conference in New York that he views VoIP as a long-term threat ([www.nwfusion.com](http://www.nwfusion.com), DocFinder: 8646). VoIP presents a challenge to SBC's ability to retain customers and their access lines, and to SBC's profit margins; but Stephenson also said SBC can do VoIP "as well, if not better" than anyone else, and that wireless substitution presents the bigger threat to access line retention.

"VoIP is not a big threat to the Bells today, but if they don't embrace it, it would become a threat," says Jeff Kagan, an independent telecom analyst. "The Bells have millions of customers and billions in revenue and they want to protect that base, so IP offerings are obviously defensive."

VoIP will let SBC and other regional Bell operating companies stave off incursions from AT&T and MCI, which offer or have plans to offer nationwide VoIP services, and IP pure plays Vonage and Packet8. Other RBOCs, including Qwest and Verizon, also have plans to roll out business and consumer VoIP services. Qwest last week announced a deal to deploy Lucent next-generation voice gear.

HIPCS is targeted at businesses with 10 to 250 stations. Prices start at \$29 per station for a limited regional plan and \$39 per station for a national plan. Contracts range from two to five years. SBC will unveil HIPCS for larger organizations in nine to 12 months, the company says.

Last week the company also said it will roll out a network-based IP-VPN service in the first quarter of 2004. It will cost \$700 per month for a T-1 line and \$80 per month for a DSL link. The carrier already offers software- and customer premises equipment-based VPN services under the PremierSERV IP-VPN brand. ■



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## Comdex

continued from page 1

developers, carriers, corporate network executives and certainly not end users — appears to have looked seriously at this issue. This, despite the fact that millions of cell phones are now in the hands of corporate employees.

Sima recently began playing with Short Message Service (SMS) as a way to launch a denial-of-service attack against cell phone users, using his own phone and those of co-workers. "I can send 1,000 SMS messages to your cell phone in the blink of an eye," he said. "And I can do it anonymously." He created an SMS flood, as he terms it, that rendered his cell phone unable to make or take calls.

After the experiment, he con-

tacted his cellular carrier, T-Mobile, and asked if it could stop or block an SMS flood. He said the answer was "no."

Rubbing salt into the wound was his subsequent discovery that T-Mobile charges the subscriber on the receiving end of the flood for every SMS message over a certain limit. Sima paid more than \$30 for being attacked.

Two IT professionals from a big aerospace company sat glumly at the end of Sima's presentation. They heard him say, "People can attack your phones and PDAs very easily."

"It's alarming," says Fred Brooks, who heads an IT team supporting executives at the aerospace company, which he requested not be named.

His end users have Research In Motion Blackberries, which sport an array of built-in security and data-protection features. But cell phones and smart phones are another matter.

"We forbid cell phones with

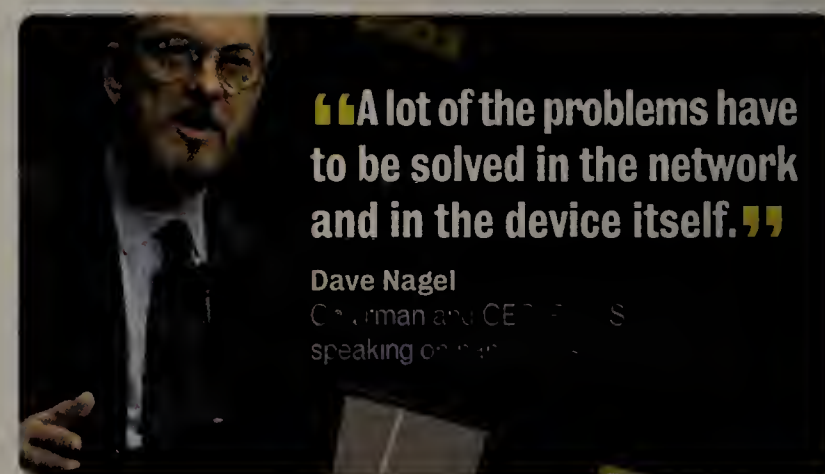
cameras," Brooks says. "But how do you enforce that? We don't have the resources or the mandate to pat people down [and physically search them]."

That could be next, as network executives realize the scope and seriousness of the potential security problem.

"One of our enterprise customers stated the problem very clearly," says Dave Nagel, chairman and CEO of PalmSource, the recent Palm spinoff that has responsibility for the PalmOS operating system. "He said, 'I have a \$250 device with \$250 million worth of corporate data. How are you going to help us protect that?'"

"A lot of the problems have to be solved in the network and in the device itself," Nagel says.

The next release of PalmOS, due by year-end, will feature protected memory and support digitally signed applications. Among other things, protected memory can prevent malicious applications from accessing data or parts of



**"A lot of the problems have to be solved in the network and in the device itself."**

**Dave Nagel**

Chairman and CEO of PalmSource  
speaking on stage

the operating system, Nagel says. Digital signatures will make it easier to block malicious or untrusted applications from finding a home on the PalmOS device.

But security experts, and at least some users, are underwhelmed by what vendors and service providers are doing to solve the problem of device security. Most of that work falls to network, IT and security professionals.

Jody Patilla, information security manager at the J. Craig Venter Science Foundation in Rockland, Md., says she spent about six months building security policies into the organization.

She still struggles to keep those policies enforced across wireless LANs (WLAN) and mobile clients. One problem is end users who consider themselves exempt from following security policies. Patilla recommends getting human resources or upper management backing for wireless and mobile security.

The potential problems are daunting. Tom Goodwin, vice president of operations at Bluefire Security, spoke on the handheld security panel and ran through a litany of threats: theft and corruption of corporate data; unauthorized access; disruption of transactions to and from the handheld; loss of data; and malicious code passed to an enterprise network from the handheld. If the device is stolen or lost, and unprotected, corporate e-mails and other data are exposed, Goodwin says. With handheld memory capacities on the rise, the amount of data lost could be substantial.

Worse, Goodwin says, your current tools, which are designed for wireline networks over which you have broad control of client PCs anchored to desks, don't work. "Conventional [security] techniques don't reach out to protect handheld devices," he says.

Goodwin cites the practice of businesspeople "beaming" their electronic business cards to each other, via infrared, Bluetooth or a

peer-to-peer WLAN connection. "That data could have a Trojan horse," he says. "Then when you sync your handheld to your desktop PC, you introduce that Trojan horse to the corporate net."

He recommends in-depth security: policies that spell out the threat to users, and their responsibilities; and an analysis of what corporate data is on the handhelds or accessed by them, its sensitivity and how it's accessed. Then, make use of personal firewalls, create a solid anti-virus architecture, and run regular scans of the software versions and patches on the handhelds. Use VPNs for connections and file encryption on the device, he says.

Global Hauri, an anti-virus vendor, unveiled at Comdex its PalmOS and Microsoft Pocket PC versions of its ViRobot anti-virus scanner. Reviewers have lauded the notebook version for its easy-to-use interface and extremely fast scanning speed, plus its ability to restore infected files to their original condition. It is priced at \$20. The company has a management application for enterprise users.

WLANs, PDAs, phones and other handhelds are the rails over which the next generation of complex and sophisticated viruses, worms and Trojan horses will run, says Larry Bridwell, program manager for content security programs with TruSecure, a provider of intelligent risk management products and services.

"It's a dangerous world, and when you go into the jungle, you have to be prepared for it," he says. ■

## Smaller Comdex alive and well, organizers say

Perhaps the most telling comment about last week's Comdex Fall 2003 was overheard between two airport shuttle drivers.

"What is Comdex?" one asked.

That's a question that would be hard to imagine being asked in the past, given Comdex's history as the biggest high-tech trade show in the U.S.

But this year the event drew only 45,000 attendees, about one-fifth of the 220,000 who attended three years ago. And the number of exhibitors, 550, is only about one-quarter of the total in 2000. The show also lacked much in the way of technology or business announcements beyond a few tidbits from Sun and some lesser-known companies.

Still, show organizers tried to put a happy face on the event, saying attendance met expectations. They also lured high profile speakers such as Microsoft Chairman Bill Gates and Sun CEO Scott McNealy.

"We have fewer numbers than in the past, but we have higher booth density, more people per square foot this year," says Eric Faurot, Comdex's vice president and general manager.

Competition from a new show in town, Computer Digital Expo, didn't faze Comdex planners. That event focused on enterprise IT professionals and drew about 4,000 attendees and 60 participating companies.

"The other shows, HP with its sales meeting,



**As expected, attendance at last week's Comdex show was down from years past, but organizers have an optimistic outlook for next year.**

their presence here the week before Thanksgiving, proves this is historically Comdex's week," Faurot says.

In terms of next year's Comdex, Faurot says Microsoft already has signed on, and show sponsor MediaLive International, formerly Key3Media, is working to bring companies such as IBM back into the fold.

"Comdex and IBM had a very public divorce in 1997, but this year there are 10 IBM speakers. We want to get the key companies as a foundation for this new show going forward," Faurot says.

Comdex in the past featured a wide breadth of technology, but this year the group honed in on key areas to help IT buyers and end users get information on important technology trends. Show planners say wireless and security tracks got a lot of hits, while on-demand computing didn't resonate with users as much as expected.

— Denise Dubie and John Cox

## Correction

■ The story "Mirapoint fattens up spam stoppers" (Nov. 10, page 29) should have said that the version of Mirapoint's Messaging Director Operating System including the Full-Spectrum anti-spam software is Version 3.4.



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## Site: Lessons from Lining Users

### CompUSA

continued from page 1

voice over IP (VoIP), Wi-Fi and a converged IP VPN/frame relay WAN.

"We tell our customers we've got the leading technology, and now we're starting to use some of that ourselves," says Ken Monroe, director of IT communications and support services. "There are a lot of savings out there with [VoIP] and wireless."

One problem CompUSA wants to address is its expensive telecom infrastructure. The company has Nortel Meridian PBXs in each store, but these systems are basically islands — there is no unified management, and long-distance calls result in big monthly bills.

"Stores are always calling each other for inventory checks, or for personnel transfers," Monroe says.

He estimates the company can save about \$2.7 million over five years by moving inter-store calls off of the public switched telephone network and onto CompUSA's data network. With IP PBXs on CompUSA's backbone, software updates and maintenance to the systems also could be done centrally.

Monroe and his staff evaluated Alcatel, Cisco and Mitel IP PBX offerings. But the Alcatel product proved too costly so it came down to Cisco's CallManager IP PBX and Mitel's ICP 3300.

"The problem with Cisco was it didn't have a PBX feature we use extensively — multiple call ringing," he says. Having the ability of an incoming call to ring multiple phones is useful in retail, Monroe says. That left the Mitel box as the primary choice.

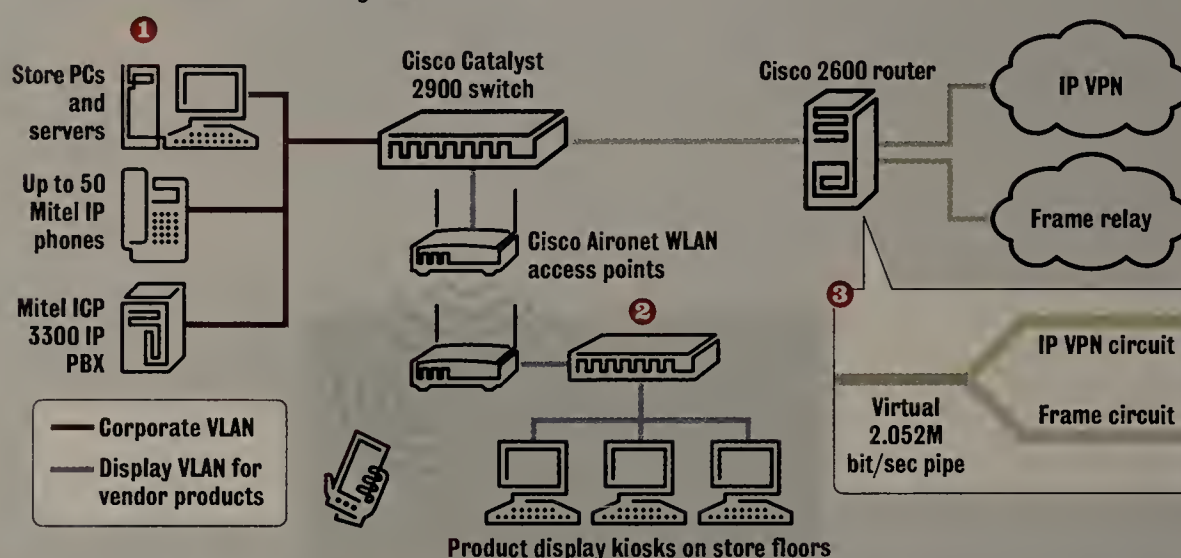
The next step was to bring the Mitel ICP 3300 into the lab. "The first thing we did was sic our security people on the product," Monroe says. "They're basically a couple of hackers. We tell them go break things, so they went into the Mitel box and broke it. We test everything that way."

The ICP 3300 is a Linux-based appliance with an operating system modified to support only IP PBX functions. But Monroe's staff found some problems.

"The Mitel [IP PBX] just had a ton of ports open," says Rob Hilliard, WAN manager at CompUSA, who helped discover the vulnerabilities. The ports let Hilliard and Security Manager Pat Hykkonen reach the appliance's

## CompUSA's in-store upgrade

To help cut telecom and in-store wiring costs, CompUSA is installing VoIP, Wi-Fi, VLANs and an IP VPN/frame relay WAN in its 230 stores.



1 A Mitel IP PBX and IP phones, as well as corporate PCs and servers, will sit on one secure VLAN.

2 Another VLAN will separate store display PCs from other equipment, allowing only Internet access.

3 A Cisco router will combine an IP VPN service from XO and a frame relay link from AT&T into a virtual 2.052M bit/sec WAN pipe for each store.

operating system and shut it down. "That was the configuration straight out of the box," Hilliard says. "The developers must not have thought about that. We told them, and they fixed it."

Now the IT group has more confidence in the product, he says.

Each CompUSA store will get an ICP 3300 and up to 50 IP telephones. CompUSA also is upgrading store LANs, installing Cisco Catalyst 2900 series switches that support 802.1p traffic prioritization. That will ensure voice packets are given top priority when switched over the LAN and WAN.

Most CompUSA stores have product support/repair departments and provide in-store training classes, and some stores provide small-business IT services.

These subgroups have unique call-feature requirements, such as voice mail for the service groups, hunt groups for support technicians, and multi-line calling and paging for sales. The Mitel box supports these functions. "We wanted the changeover to be as transparent as possible to our staff" in terms of features available, Monroe says.

Thirty of the Mitel boxes have been deployed and another 168 will be installed next year. The rest of the stores, and several new ones scheduled to be opened, will be upgraded in 2005. This schedule takes into account stores coming off Nortel leases. "We didn't want to buy a bunch of equipment and sit on it," Monroe says.

### Shaping up the WAN

Before deploying the Mitel IP PBXs, Monroe and Hilliard

decided the two 512K bit/sec frame relay connections serving each store would not be adequate for VoIP. So the company opted to move its primary voice/data backbone to a T-1-based IP VPN service from XO Communications. To back that up, each store will retain one 512K bit/sec frame relay link.

CompUSA worked with XO and AT&T engineers to combine the frame relay and VPN circuits into one virtual pipe that delivers more than 2M bit/sec of bandwidth to each store. This trick, which is used for failover, is done with Enhanced IGRP, a Cisco routing protocol running on 2600 routers installed at each site. "If one line goes down, whether it's frame or VPN, the other carrier takes on the voice and data loads," Monroe says.

XO also helped CompUSA configure quality-of-service settings between Mitel's gear and XO's network to ensure voice quality stayed consistent across the WAN. "We put the Mitels in the stores, pointed them to the new XO circuits, and they sounded beautiful," Monroe says.

The IP VPN service from XO cost half as much as what the company was paying for one AT&T frame relay circuit. And now the WAN is twice as fast.

### Cutting wires and costs

CompUSA also is benefiting from integration with its new in-store LANs. Putting voice on the LAN infrastructure in stores saves on phone wiring, Monroe says. Cabling costs are reduced by rolling out Wi-Fi on store floors. Combined, these savings

will amount to \$30,000 per store, he says.

A combination of new Cisco wired and wireless LAN gear, and some creative network configurations, will let the retailer better serve the vendors whose gadgets it sells.

"Lots of vendors want to do kiosk displays, which require moving a lot of things around the store floors," Monroe says. "That's also a lot of cabling moving around."

Instead of hard-wiring displays as in the past, CompUSA is in the process of installing Cisco Aironet Wi-Fi gear in the kiosks. A wired switch or hub is used to connect products in the display, and then wirelessly tie the kiosks to the store's wired network.

To avoid giving display PCs open access to store networks — where IP voice and sensitive data such as sales figures and credit card numbers are flying around — CompUSA is setting up secure virtual LANs (VLAN) with the Cisco Catalyst 2900 switches in each store. One VLAN is dedicated to display merchandise that requires Internet access.

"PC vendors want Internet access for their machines," Monroe says. "AOL also has displays in our stores and they need access out. The VLAN gives everyone a secure, separate pipe to get to the Internet, and nothing else in the store."

This wireless VLAN also keeps snooping Wi-Fi users off the company's corporate network, he says. ■



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## Security

continued from page 1

— already implemented in different ways in products from Check Point, Enterasys, Nortel, Sygate and others — would let managers of end-to-end Cisco networks build security into every part of a wired and wireless enterprise infrastructure.

Under CNAC, Cisco network devices would cordon off vulnerable Windows NT, XP and 2000 machines during an outbreak.

"A busy systems administrator used to have days to respond to a threat, and now it's only minutes or even a second," said CEO John Chambers last week at an event kicking off the program. Chambers noted that the recent MS-SQL Slammer worm hit 55 million hosts in about 11 minutes and Blaster about 128 million systems in the first 3 minutes.

A main cog in CNAC is Cisco's Trust Agent — client software that gleams security-related information from desktops, based on hard drive scans from anti-virus clients of Network Associates, Symantec and Trend Micro. The

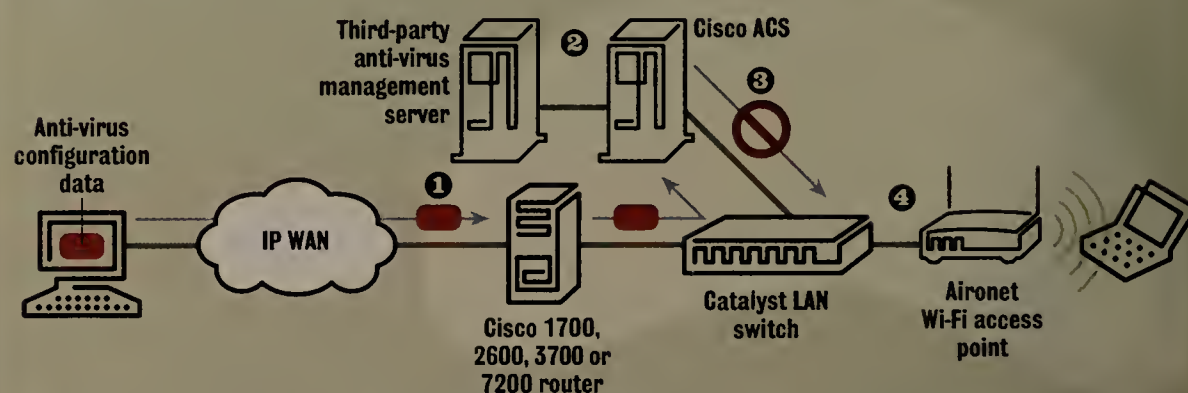
Trust Agent — free for Cisco customers — will send the security data to a Cisco Access Control Server (ACS), which will act as a repository and policy-enforcement tool. Cisco also plans to later add the Trust Agent functionality to its desktop intrusion-prevention product, called Cisco Security Agent, which it gained in its acquisition of Okena last year.

The ACS communicates with anti-virus/configuration servers from any of the three partners to check client machine data against policies. Between these two nodes, a client is deemed "good" or "bad." If bad, the ACS tells a Cisco router to block that user's IP address via a Layer 3 access control list (see graphic). A new version of Cisco's IOS routing software would be needed to enable this.

"[CNAC] is going to provide another layer of protection for our customers," said Network Associates' CEO George Samnuk, who joined his anti-virus rivals, Symantec CEO John Thompson and Trend Micro CEO Steve Chang, at Cisco headquarters last week to back the Cisco initiative.

## Cisco's security initiative

How the Cisco Network Admission Control system works.



1 A branch-office PC running an anti-virus client and the Cisco Trust Agent software tries to access a corporate network.

2 The Trust Agent delivers anti-virus configuration data to a Cisco Access Control Server (ACS). The ACS and an anti-virus management server determine if the PC's configuration matches network policy.

3 If the PC is not configured properly, the ACS tells the router to block the PC's IP address.

4 In the future, Cisco switches and WLAN gear will be able to check users in a campus LAN or WLAN.

This first phase, for routers, is targeted for the middle of next year, with Catalyst LAN switches and Aironet Wi-Fi access points to follow later with CNAC-supporting software. On the LAN side, 802.1x will be the mechanism for shutting down switch ports, while Cisco's Lightweight Extensible Authentication Protocol will enforce access on the wireless side.

Chambers also outlined a scenario where switches could be configured to route untrusted LAN or remote-access clients into a secure virtual LAN segment. In this scenario, users could update their anti-virus definitions or operating system patches to comply with security policies before being let back onto the network.

The three largest anti-virus software vendors, Network Associates, Symantec and Trend Micro, last week promised they would include the licensed Cisco Trust Agent in client security products. However, much about CNAC remains a work in progress, and Network Associates and Symantec expressed a few concerns.

Network Associates has so far decided to market the Cisco Trust Agent only as stand-alone software by the middle of next year, and not as part of its McAfee anti-virus products. McAfee division needed more customer feedback to understand how they might use it. Support for the Cisco Trust Agent likely would be done via Network Associates' management console, ePolicy Orchestrator.

McAfee earlier this year teamed with Nortel on its Contivity TunnelGuard so it can block desktop users without anti-virus updates. Checking for McAfee anti-virus status also can be done using the Check Point VPN Secure Client.

Trend Micro, which intends to include the Trust Agent directly in its anti-virus software by the middle of next year, said Cisco's approach promises to dramatically reduce worm contagion.

"The problem is you don't know which PC has the proper patch, and there's re-infection," Chang said. "We want something that re-directs [the computer] to do management updates."

But details are unclear and

untested on the management consoles that Cisco and the anti-virus vendors envision to set individual user policy, configure the Trust Agent on the desktop and coordinate with Cisco routers.

Cisco acknowledges there will be no central "dashboard" for setting and distributing policies. Criteria for permitting or denying access would be managed on Cisco ACSs, in combination with anti-virus management servers from the partners and Cisco network hardware configuration tools such as CiscoWorks.

Lily De Los Rios, Symantec's vice president of product delivery, said the goal is that Cisco and Symantec will develop management consoles to coordinate security-policy enforcement tasks around anti-virus updates and patching.

But Symantec — which conspicuously announced its own separate "client compliance initiative" last week that involves working with Aventail, Check Point and others on APIs for security compliance — acknowledges it might run into a "collision" with Cisco on some product design.

Analysts also warn that CNAC could end up looking like a lock-in to users.

"[CNAC] is based on some standards, but overall it's still a proprietary solution," says Lawrence Orans, principal analyst at Gartner. "Only Cisco and three anti-virus partners can deliver this functionality. If you run a Cisco network, but want to have Extreme or Foundry switches in certain areas, you will lose this [security] functionality." Having one non-Cisco switch in a network would leave a hole in the architecture, he adds. ■

# Check Point airs six-month plan

■ BY TIM GREENE

BOSTON — Check Point has laid out a six-month plan for how it intends to help companies beef up security for Web-based remote access as well as internal corporate networks, although details of the plan remain sketchy.

A new product family called Web Security will be designed to unify Internet remote access technologies to enable the most appropriate levels of access and security for each machine that attempts to log on to a network. Another new product family, Internal Security, would segment networks to contain attacks and block them more effectively before they can take hold.

Check Point Chairman and CEO Gil Shwed says the products will borrow from the company's existing VPN and firewall offerings but require "new innovations" as well, such as the ability to contain attacks within network segments (see [www.nwfusion.com](http://www.nwfusion.com), DocFinder: 8647 for a Q&A with Shwed).

On the Web security front, Shwed says that currently to grant a broad mix of access methods and security levels, companies might need to install Secure Sockets Layer (SSL) remote access and IP Security VPNs. This could be too cumbersome, he says. "You need a unified approach to get the right level of eligibility and security," he says. "We don't want the company to have three solutions for the endpoint."

Shwed says a form of SSL remote access will be part of Web Security, but the package will go



**“What we'll be doing will be fairly unique. It will compete [with] and it will replace SSL VPN solutions.”**

**Gil Shwed**

Chairman and CEO, Check Point

beyond that. "What we'll be doing will be fairly unique.... It will compete [with] and it will replace SSL VPN solutions," he says.

Check Point's take on SSL remote access didn't sit well with one analyst who was briefed. "They brushed over the topic. That signals they don't have a fully baked solution," says Jason Wright, an analyst with Frost & Sullivan.

The Web product is expected to provide unified authentication and authorization and let users sign on once to the Check Point device to access applications without having to sign on again to each application server. These are capabilities already found in the company's UserAuthority product, although Check Point says the new product also will protect Web servers from network- and application-layer attacks (a feature of Check Point's current firewall). The new Web product also will check whether desktop security is properly configured before allowing access, the company says.

Shwed says the Web and Internal products will be sold separately and will work with or without Check Point's VPN-1/Firewall-1. ■



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# Infrastructure

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 ■ ACCESS DEVICES ■ SERVERS ■ VPNS  
 ■ OPERATING SYSTEMS ■ NETWORKED STORAGE  
 ■ VOIP ■ WIRELESS NETWORKS

## Power over Ethernet generates buzz

■ BY PHIL HOCHMUTH

Power over Ethernet is catching on with organizations looking to cut costs on wireless LAN deployments. The technology also can keep IP phone users talking even if the

lights go out.

Some users already have discovered that powering Wi-Fi access points with PoE can save hundreds, even thousands, of dollars per installed device by eliminating costly power-outlet installations. Meanwhile, early adopters of IP PBXs and phones say PoE is an indispensable way to provide dial tone during power outages — a common feature on legacy PBXs that the voice-over-IP market was slow to adopt.

PoE, an IEEE standard since June, is available on switches from almost every major LAN infrastructure vendor, and IP telephony and WLAN equipment companies. Most vendors offer PoE switches that are based on the IEEE 802.3af standard. Cisco offers a proprietary PoE technology for its IP phones, switches and Wi-Fi gear, and 802.3af-based products.

The IEEE 802.3af standard defines two methods for delivering up to 48 volts of DC power to PoE-compliant devices over eight-wire Category 5 and 6 cabling. One is called mid-span, which involves running power over unused wire pairs in a LAN cable. (Only two of the four pairs are used to deliver data in Ethernet and Fast Ethernet.) Mid-span products from the company PowerDsine often are built into patch panel-like devices that can add PoE to existing LAN infrastructures.

The other, increasingly popular version of 802.3af is called end-span. It runs DC power signals over the same wire pairs used for data transmission, but at different frequencies than Ethernet signals (see graphic). Industry experts say end-span devices are becoming popular because they usually are built into new switches with PoE, which users often buy for IP telephony or WLAN rollouts. End-span also allows Gigabit Ethernet and PoE to co-exist as 10/100/1000M bit/sec links become more popular. (Netgear last week announced a triple-speed Layer 3 switch with PoE at Comdex.)

PoE has become a hot complementary technology for WLANs. Several makers of wired and WLAN gear — 3Com, Airespace, Aruba Wireless Networks, Cisco, Extreme, HP and Nortel — now offer 802.3af-compliant access points and switch ports.

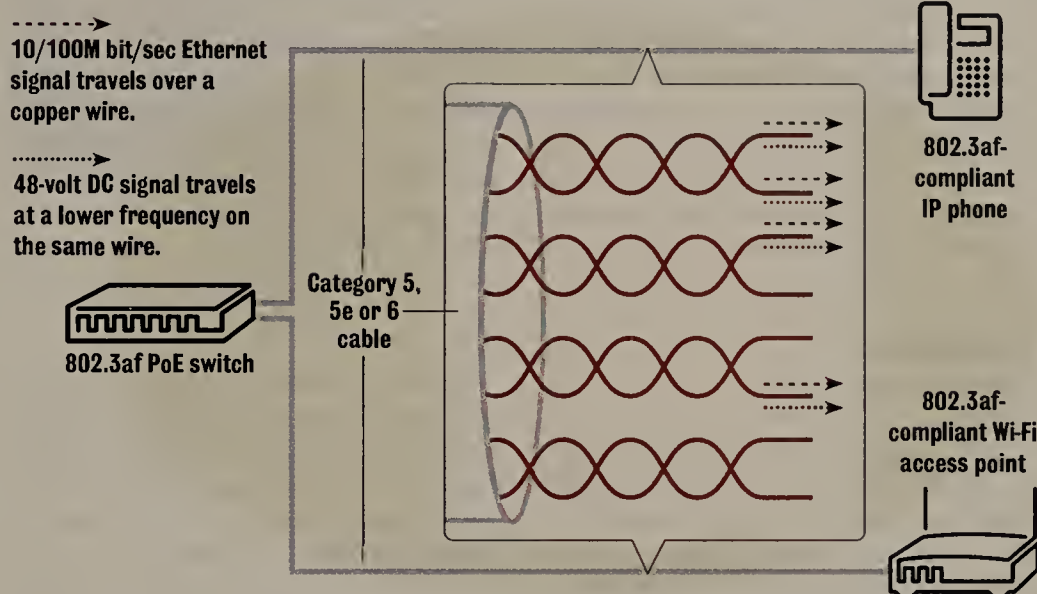
One benefit of using PoE with Wi-Fi is that it eliminates the need to have electricians install new power outlets to support large-scale WLAN deployments. This benefit becomes quickly obvious in very large-scale WLAN access point deployments,

See PoE, page 18

### Power over Ethernet

#### ■ HOW IT WORKS

In the 802.3af standard for in-line power, the wires used for data transmission (wires 1, 2, 3 and 6 in a four-pair UTP cable) also transmit 48 volts of power simultaneously.



## Gear guards networks against infected laptops

New CyberGatekeeper works on LAN instead of remotely.

■ BY TIM GREENE

InfoExpress is coming out with packages to protect LANs from infections brought in by laptops that have been used outside a network.

CyberGatekeeper LAN (CG LAN), which is expected to be available in January, makes sure LAN workstations have the proper security in place before they are allowed access to the local network. This is similar to the company's original CyberGatekeeper Remote, which protects networks from WAN attacks coming through corporate-issued computers that access business networks via the Internet.

The difference is that CG Remote must be placed between the WAN gateway and the LAN, and blocks that path to any unsecure machine. CG LAN is attached anywhere to

the LAN and enlists LAN switches to block particular ports to keep unsecure machines from accessing the LAN at large.

Laptops that access the Web or personal e-mail accounts outside the LAN run the risk of being infected if appropriate security software has been disabled. If they are equipped with CyberGatekeeper, such laptops are audited for compliance with corporate security policies when they attempt to log on to the LAN. If a laptop is non-compliant, CyberGatekeeper denies access and informs the user why and can redirect the user to a secure virtual LAN where the necessary updates can be obtained (see graphic, page 18).

One interested executive is the vice president of IT at a major investment firm. "Our intranet is wide open today to employees, and we have infections coming in from roaming laptops," says the vice president, who spoke on condition of anonymity. His company uses the WAN version of CyberGatekeeper.



### Security

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See InfoExpress, page 18

### Short Takes

■ **Cisco** last week introduced several capabilities for its **MDS 9000 family of multilayer intelligent director-level and fabric Fibre Channel switches**. Among the features are the ability for servers in different virtual storage-area networks to share disk or tape storage. In addition, IT managers now can set quality of service and prioritize traffic dynamically based on the requirements of the data. The new switches also let Fibre Channel, iSCSI, Fibre Channel over IP and Fibre Connection be mixed on the same switch. The company also announced a new version of its SAN operating system, which includes centralized management of multiple SAN fabrics, discovery, health and event monitoring, and historical performance monitoring.

■ **BIOS specialist Phoenix Technologies** is taking its basic I/O systems software a step further to create what it calls "a more sophisticated integration" between hardware and operating systems. Phoenix this week is expected to introduce its first **Core Systems Software** products, which were designed to provide better reliability, security and manageability for servers and PCs. With its TrustedCore product, for example, users could store security keys deep in server system software below operating systems to ensure that only authorized administrators have access. TrustedCore for notebooks is expected to be available next month, and the technology should be integrated in servers from companies such as IBM, Fujitsu and NEC early next year, the company says.



## TOLLY ON TECHNOLOGY

Kevin Tolly



**O**f all the grassroots movements in recent memory to take hold in corporate IT, none has caught on so rapidly or tenaciously as instant messaging.

With a purely consumer-oriented genesis, AOL's Instant Messenger (AIM) and Yahoo's Messenger service were never designed for the job to which corporate users happily applied them. It is with interest that we note the recent passing of Yahoo's business-class offering as Yahoo's vice president, ironically named Steve Boom, announced that for Yahoo business IM had gone bust.

Given that from my own unofficial and completely unscientific anecdotal evidence, IM is going anything but bust — something seems amiss. Where is the disconnect? To a large extent, it perhaps can

## Business IM: Boom or bust?

be traced to a case of "fixing what ain't broken" combined with the radically different way that IM "went corporate."

Not since corporate users began their battle with mainframe-centric IT departments (then called MIS) in the early 1980s by buying and deploying departmental Novell NetWare LANs, have I seen a tail-wagging-the-dog situation such as this one surrounding IM. (Although, the surreptitious introduction of wireless is a close runner-up.)

Because a service such as AIM required no central IT involvement, it only required the IT department to do nothing — something I'm sure many end users would claim their IT departments are expert at.

One could claim without exaggeration that IM was a classic Trojan horse. All along, corporate IT was vigilantly guarding the perimeter courtesy of firewall technology. Based on the assumption that all questionable traffic would emanate from without, few companies concerned themselves with traffic emanating from within.

Thus, "implementing" IM at corporate simply meant going to work, downloading the IM program and logging on. Instantly you could communicate with existing members, and it took only minutes to get your uninitiated colleagues to follow suit. Given the general lack of visibility most network managers have to individual application flows, they were most likely blissfully unaware that this was taking place. They were being "wagged" without even knowing it.

Not willing to leave well enough alone, the vendor community came to the rescue of the IT manager — or so they thought.

Yahoo and others instantly recognized — after the fact — the potential for turning "backdoor" IM into a "front door" product or service to sell to IT departments. As these things go, they didn't have a bad story. A Yahoo could state, quite correctly, that these services never were designed to be business class. What followed was the usual litany of elements needed for such products: securi-

ty, management and control.

Vendors appealed to the deeply rooted control instinct of many IT departments but, this time at least, appeared to have failed. They just didn't buy in.

The rapidity with which Yahoo dumped its business IM was breathtaking. The announcement that it was abandoning the service came during the first week of November. This was only a bit more than a fortnight after Yahoo used a messaging conference venue to announce with great fanfare the upcoming Version 2.0 of its business messaging product. Alas, before it saw the light of day, its days were over.

Still, with IM predicted by some to overtake even e-mail as the preferred method for informal electronic communications, business IM surely isn't dead — it just won't be Yahoo that gives it life.

*Tolly is president of The Tolly Group, a strategic consulting and independent testing company in Boca Raton, Fla. He can be reached at ktolly@tolly.com.*

### InfoExpress

continued from page 17

Before using CG LAN, he would want to make sure of two kinds of interoperability. First, he would want to automate downloads of updates needed by the machines that required them to use software distribution tools the company uses. He says it is important to make the added security CG LAN would provide as transparent as possible to end users. He said he would also want to make sure it was integrated with 802.1x LAN authentication, which his company uses.

Because enforcement of the policies relies on CG LAN talking to LAN switches, updating CG LAN as switch vendors update their code could result in more work for administrators, says Mark Bouchard, senior program director for technology research services at Meta

Group.

The new InfoExpress gear is suited to networks requiring the highest security, but the added administrative burden might be beyond the needs of mainstream corporations, says Jason Wright, an analyst with Frost & Sullivan.

In addition to the CyberGatekeeper Agent and Server, CG LAN includes CyberGatekeeper Policy Manager, software that lets network security executives set the policies and upload them to the server for enforcement.

CG LAN software is sold bundled with hardware. The appliances come in two models: the 1000, which handles up to 10,000 concurrent connections; and the 2000, which handles up to 20,000. Base models, including a license for 100 simultaneous users, costs \$10,000 for the LAN1000 and \$30,000 for the LAN 2000. ■

### PoE

continued from page 17

such as on big university campuses.

Purdue University in West Lafayette, Ind., recently rolled out 1,100 WLAN access points to provide connectivity to 140 buildings and 40,000 students. This project involved sticking WLAN access points in unusual places, according to Brad McCoy, network engineer for IT at Purdue. For example, the devices were fitted under ceiling tiles in the middle of classrooms, in hallways and in cafeterias. It was hard enough for McCoy's staff just to pull Category 5e cabling to such spots.

"We would have run significantly higher costs trying to power this wireless network" if AC outlets had to be installed for each access point, McCoy says.

McCoy saw PoE as the answer, but was not interested in swapping his LAN wiring closet infrastructure for new PoE switches. Instead, he installed PowerDsine 6012 Power over LAN hubs. Wherever WLAN access points need to be supported on campus, the PowerDsine hubs sit in front of wiring closet LAN switches and run 803.3af power over the network drops. McCoy estimates that the PoE setup helped save the school between \$350 to \$1,000 per access point installed because new AC outlets were not necessary.

### Power of VoIP

While PoE helps users reduce costs of WLAN deployments, the technology also is becoming a standard component of many enterprise IP telephony projects. Many organizations took for granted that their PBX system also provided power to desktop phones and voice connectivity. In early IP PBX systems, this was not the case; IP phones required their own power source, which made the devices as vulnerable as

PCs, ceiling lights or anything else plugged into an AC outlet during a power outage.

The North Hunterdon-Voorhees Regional High School District in New Jersey recently installed PoE switches from 3Com to support its 3Com NBX phone system. The school has 700 phones deployed to the desks of school administrators and to all classrooms in its two high schools.

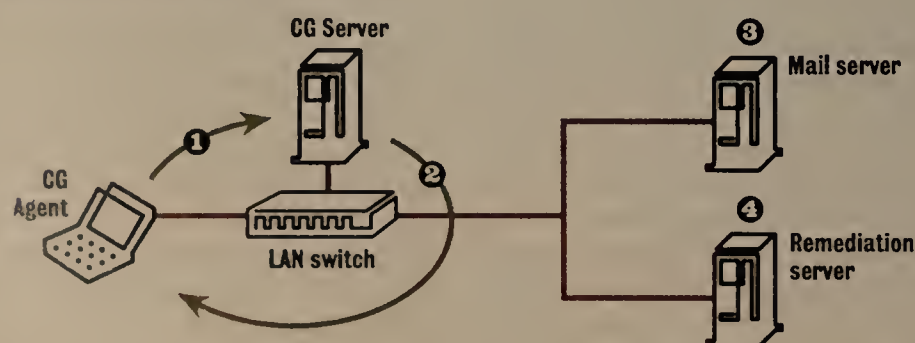
To ensure that phone service stays available during an emergency, the school deployed 3Com SuperStack 3 Switch 4400 PWR switches to all its wiring closets. These switches and the NBX IP PBX are hooked to uninterruptible power supplies that let the phone system deliver dial tone to IP phones for about three hours in a blackout.

The 3Com phones include a two-port 10/100M bit/sec switch, letting a desktop PC be connected to the LAN phone through the IP phone's switch port. This, says Rich Bergacs, director of technology for the school district, made deployment less costly because no new LAN cables had to be run to desktops or to classrooms.

While the school district sees no direct savings from running PoE to its IP phones, Bergacs says the payoff comes with the peace of mind from having a more reliable phone system. ■

## Securing LAN access

InfoExpress' CyberGatekeeper ensures that network-attached laptop PCs have proper security in place.



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## Wanted: Flexible IT pricing

IT execs want revamped licensing, maintenance fees and usage-based pricing.

■ BY ANN BEDNARZ

BOSTON — Ray Barnard is putting his foot down: Vendors need to come up with new, more flexible pricing models if they want a piece of his \$350 million IT budget.

"I'm not allowed to stay stagnant, you're not allowed to stay stagnant," is the message the CIO of Fluor Corp. wants vendors to hear.

Fluor is a \$10 billion engineering and construction services company. Nearly a year ago, the Aliso Viejo, Calif., firm signed a

\$350 million, seven-year IT services agreement with IBM that covers network infrastructure, LAN and desktop support, server management and help desk administration. As part of the deal, Fluor transferred 350 employees to IBM and kept about 500, Barnard told an audience of IT executives at last week's AMR Research executive conference.

Looking ahead, Barnard said he sees a day when he will run Fluor's IT department with 100 to 120 people, having outsourced 80% to 90% of its activities.

A key element of the deal with IBM is usage-based pricing for computing resources. These on-demand IBM services are part of a larger Fluor initiative, begun about two years ago, to implement a standard, enterprisewide IT framework. The initiative, which includes consolidating applications and servers, has allowed Fluor to slash its IT budget by about \$60 million. About half of that savings can be attributed to on-demand services, Barnard said.

"The technologies are real. The capabilities to use a utility-based model are real. They are not working perfectly yet, but they work," he said.

Knowing that the model can work, Barnard is insisting on using it whenever



**“Nothing is allowed to go forward without showing the ROI.”**

Ray Barnard  
CIO, Fluor

possible. If a software vendor wants to do business with Fluor, the vendor must understand the concept of on-demand, at a minimum, Barnard said. A vendor also will have a better shot at Fluor's business if it's an IBM partner. Barnard estimates that about 60% of Fluor's software providers have some kind of relationship with IBM's on-demand model.

Fluor's plans for migrating applications to an on-demand model are ambitious. Even core engineering and construction management applications one day will move to a utility-based structure, he said.

These days Barnard works with Fluor's two key ERP vendors, SAP and J.D. Edwards (now owned by PeopleSoft), to devise an on-demand strategy and deployment schedule.

### Price wars

Cost is the chief reason for Fluor's transition to on-demand services.

Barnard isn't shy about questioning vendors' pricing strategies. He doesn't want traditional licensing and maintenance models anymore; he wants a different model — one that lets Fluor do more while taking on less risk.

A quantifiable ROI is imperative.

"With license fees and other fees under the old model, the ROI does not hold true," Barnard said. "Nothing is allowed to go forward without showing the ROI."

Upgrades need to be justified, and a few new bells and whistles won't cut it, Barnard said. "When an upgrade comes in, we take a look at it. If it doesn't give me enough value, it doesn't go in."

Barnard is not alone. While there are signs the economy is improving, CIOs still are under pressure to trim costs and

See Pricing, page 22

## Adobe aims to win PDF converts with new server

■ BY JOHN FONTANA

Adobe has developed a server that promises to let companies turn nearly any file into a standardized PDF document from any desktop or device connected to their corporate networks.

The Adobe Acrobat Elements Server is a network-centric version of the desktop document-conversion technology currently offered by the company. Users can e-mail files or post them into a folder on the Elements server and get back PDF documents that conform to specific pre-configured formats stored on the server, including controls for access and read/write privileges.

Elements Server allows corporations to ensure consistency of the material created within departments or business units. The server also includes a Web services API that allows it to be integrated into a workflow so documents for tasks such as processing a loan or customer order can be converted into PDF format.

"[Elements] server gives you another way to make PDF work for you," says Kendall Whitehouse, director of advanced technology development at the Wharton School of the University of Pennsylvania in Philadelphia. "It makes document creation ubiquitous." Some classes at the school require PDF-formatted assignments that students post to a Web site. Teaching assistants and professors pick up the PDF files from the Web site, mark them up and grade them before posting the files back to the Web site for the students to access securely.

Files are viewed using the free Acrobat Reader software that runs on any platform, including Windows, Linux and handheld devices. "Element means students can work with any document-creation tool from any location," Whitehouse says.

Elements Server supports conversion from numerous desktop file types, including Microsoft Word and Excel; Corel WordPerfect; Adobe Photoshop and PostScript; and image formats such as JPG and GIF.

Acrobat Elements Server runs on Windows 2000 and XP Professional. Pricing begins at \$28 per user for a 1,000-user license, or \$22,500 per server. Adobe plans to ship the server by the end of the month. ■

### Hand it over

The percentage of IT organizations using some sort of outsourcing services will grow from 20% today to

**50%**

over the next three years, according to AMR Research. Aggressive outsourcing can help companies shave about 40% off their IT spending, the firm says.

### Short Takes

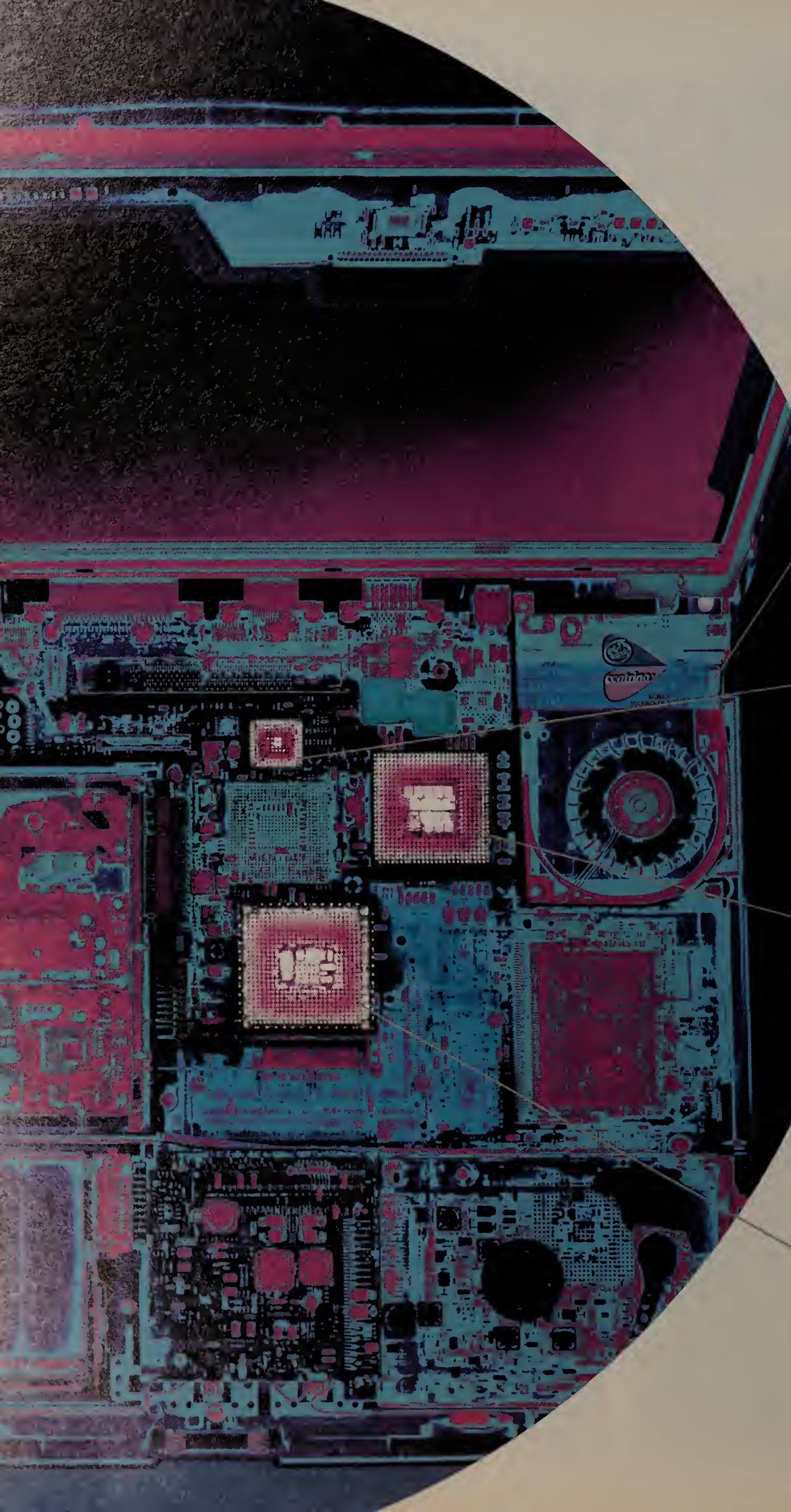
■ **Sun** last week announced it has entered into an agreement to acquire identity management software vendor **Waveset Technologies** for an undisclosed price. Sun says Waveset's Lighthouse suite of products has some capabilities, such as user provisioning, not found in Sun's identity management software. Sun says it intends to integrate some portion of Waveset's software suite into its portal server and identity management products, but has no plans to phase out support for Waveset's 50 or so customers.

■ **Neon Software** last week introduced upgraded network diagram-

ming and management software with new features such as the ability to scan continuously for rogue computers, and diagram managed switches and hubs. LANsurveyor 8.0 for Windows also includes upgraded hardware and software asset-management capabilities, the company says. Pricing starts at \$500, and an enterprise edition costs \$10,000.

■ **Q1 Labs**, which makes a passive security monitoring box and complementary software, last week announced \$14.4 million in second-round venture funding, bringing its total to more than \$18 million. The new funding, led by Polaris Venture Partners and Menlo Ventures, will boost Q1's sales, marketing and product development efforts. The company also named Shaun McConnon as CEO. He previously led security company Okena, which Cisco bought earlier this year.





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'NET  
INSIDERScott  
Bradner

Skype, well rhymed with “hype,” has come to town. Over the last month or so it seems just about every major newspaper and trade journal has had at least one story on this latest kick in the pants from the folks who brought the world Kazaa. Last time these people planted a good one on the posterior of the music industry and this time they are aiming at a very tender spot in the anatomy of telephonis gigantis (the traditional phone companies).

In case you've somehow missed it, Skype is a peer-to-peer phone overlay network that runs atop the Internet. The beta software has been downloaded about 3 million times since becoming available at the

## Is Skype the, an or no answer?

end of August. With this software, anyone with a PC running Windows 2000 or Windows XP can talk with other Skype users anywhere in the world, even those behind network address translators.

Skype uses proprietary software and is not supported on any other platforms, nor can it connect to the traditional phone world, where there are some 2 billion phones. Skype says it will support some other platforms in the future and will set up a way to call normal phones and non-Skype IP phones in the future.

The software and service currently is free but new functions such as calling traditional phones will cost money. Skype phone calls use the microphone and speakers in the PC or you can buy a headset. There is currently no way to plug your regular phone into your PC to use Skype.

The company says the voice quality is better than regular phones, as long as you have enough bandwidth — higher dial-up connections are OK as long as you do not

try to do anything else at the same time. But using the service over a broadband connection is a better idea.

Some reporters say Skype is right about the quality. I cannot say one way or another because the software will not run on my Macs.

It is hard to say if Skype will be as important in shaping the future of telephony as Kazaa looks like it will be in reshaping the music industry.

Regulators could try to close it down tomorrow, or the cable and telephone companies that bring you broadband Internet services could mess up these services just enough to make Skype calls sound bad. Skype says it had 100,000 simultaneous users by late October but that is a very small drop in the telephone ocean.

*The Boston Globe* reported that some stock analysts described Skype as “a giant meteor hurtling on a collision course” with the incumbent phone companies. It would take quite a giant meteor. I trust these ana-

lysts were not ones who told their clients to buy Enron stock. Other analysts seem to be stuck in the phone industry mentality that says Skype cannot actually work because the Internet does not have any quality-of-service guarantees.

I expect the truth is somewhere in between. Skype and the many other companies that can support “free” phone calls over the Internet will, at the very least, give us pundits something to talk about for a while. Keep in mind that telephonis gigantis is a hard beast to kill — just look at the dead bones of hundreds of competitive local exchange carriers.

Disclaimer: Harvard has museums full of the dead bones of things that failed Darwin's testing, but the above pundit fodder observation is my own.

*Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.*

## Sourcefire releases an IDS helper

■ BY ELLEN MESSMER

Sourcefire last week made available a network appliance that can identify the hosts, servers, wireless access points, routers and other devices on a subnet, plus many of the applications in use, to improve security monitoring.

The appliance, called Real-Time Network Awareness (RNA), passively analyzes traffic transiting through it to identify network topology. The data then is shared with the Sourcefire management console.

According to Marty Roesch, Sourcefire's founder and CTO, the goal is to have RNA improve the accuracy of intrusion-detection systems by giving them the kind of information they generally lack today about the networks they monitor.

Without detailed information about the internal network, IDS products typically generate alerts about irrelevant attacks until extensive fine-tuning is done on systems.

“We want to use the RNA data to help verify IDS,” says Roesch, who is also the inventor of the open-source IDS, Snort.

The box works somewhat like a Network Associates Sniffer, though such scanners aren't designed specifically with IDS improvements in mind. And the passive RNA device differs from active scanning devices that some say can disrupt networks.

Initially, the information from RNA will need to be used manually to improve IDS performance, but Sourcefire's plan is to enable companies to automatically feed that information to IDS products.

RNA, based on IBM eSeries server hardware, costs \$12,000 ■

### Pricing

continued from page 19

squeeze greater efficiencies out of existing technology. They're looking to vendors for answers.

Eastman Chemical has worked to centralize its IT staff, and revamp its systems and services, including moving to a single instance of its ERP software, eliminating a mainframe, and consolidating servers and storage. In the past two years the Kingsport, Tenn., company has cut 25% of its IT costs, Jerry Hale told attendees at the AMR Research event. The CIO expects to trim Eastman's IT budget an additional 10% next year.

Hale is aggressive when dealing with Eastman's technology vendors and said insistence is required to get concessions from the company. “We've had reasonable success getting costs out without losing functionality, but it's a battle every step of the way,” he said.

Randy Stone, Teradyne's CIO, described a typical love-hate relationship with Oracle: She praises the company for its help during an 802.11i rollout at the maker of test equipment for the electronics and telecommunications industries in Boston. At the same time, she resents Oracle's upgrade policies and maintenance costs. “There are pluses and minuses as with any marriage,” Stone said.

Forced upgrades are a thorn in the side



**“We've had reasonable success getting costs out without losing functionality, but it's a battle every step of the way.”**

**Jerry Hale**

CIO, Eastman Chemical

of Robert Dutton, vice president of IT and systems at General Dynamics C4 Systems. The Taunton, Mass., defense contractor recently made plans to upgrade to a new version of Microsoft Exchange when it found out its existing version would no longer be supported. The scope of the upgrade project quickly spiraled: The new version of Exchange required Active Directory, which General Dynamics didn't have. In addition, putting in Active Directory required changes to its Windows NT platform.

“We have to do it because our messaging and scheduling environment can't go out of service,” Dutton told the audience. It's a source of ongoing frustration, he said.

### Compelling technologies

It's not just vendors that are forcing technology upgrades, according to the IT executives speaking at the AMR Research event.

Regulatory issues are driving Fluor to

spend considerable IT money. So far the company has spent \$4 million to come into compliance with the Sarbanes-Oxley act, legislation passed in 2002 that governs public companies' financial reporting processes, Barnard said.

Customers are pushing two of the speakers to consider wireless inventory technology based on radio frequency identification (RFID).

Wal-Mart's requirement that all of its suppliers start outfitting pallets or cases with RFID tags by 2006 will affect Dial, said Evon Jones, senior vice president and CIO at the consumer products manufacturer. The Scottsdale, Ariz., company is looking into RFID and will do its best to fulfill Wal-Mart's requests — if it finds RFID is for the good of Dial and the good of the industry, Jones said.

If Dial chooses to invest in RFID, the company will have to do it with a small team or turn to outsourcers. Dial has been shrinking its IT staff from 130 people to 10 people while shifting its load to outsourcers, including Electronic Data Systems (EDS). Dial signed a seven-year, \$110 million deal with EDS in July.

The Department of Defense has a similar RFID mandate that will affect General Dynamics. Dutton calls the initiative “more stick than carrot.” He knows his company has to comply or it will lose the agency's business.

Some battles just can't be won. ■

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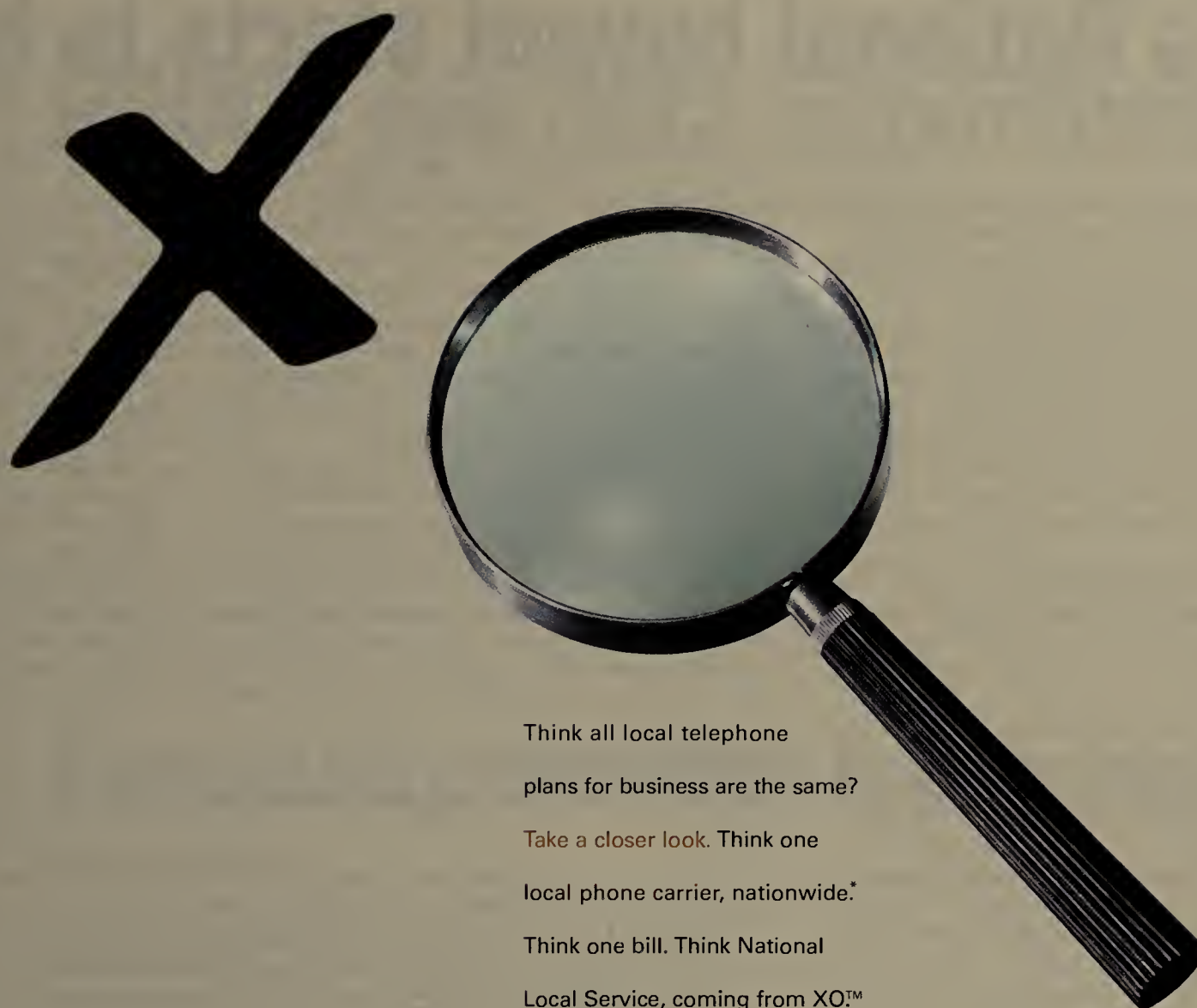
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# Special Focus

## APPLICATIONS DEVELOPMENT: Big Blue's software plan.

# IBM's Rational buyout starts to bear fruit

■ BY ANN BEDNARZ

As companies migrate from monolithic software platforms toward more flexible, service-oriented architectures, IT executives are demanding greater control over how composite applications are constructed, secured and deployed. IBM wants to help.

A year ago, Big Blue surprised the industry with its \$2.1 billion bid for Rational Software, an application development tools maker. Rational shareholders approved the deal in January, and IBM finalized the acquisition after getting government approval in February. Since then, IBM has focused on standardizing its development resources and preparing an important new code-construction product for market.

With the Rational purchase IBM gained an array of tools that address software development throughout the application life cycle, including design, modeling, testing, quality assurance, software configuration management and maintenance.

IBM had WebSphere Studio Application Developer, but it lacked features such as a testing suite, development methodology and requirements management tools. IBM needed to offer a more-integrated development environment, and Rational's tools fit its needs, analysts say.

"IBM acquired Rational with the intent of making it its application development arm," says Mike Blechar, vice president and research director at Gartner. "IBM has spent a lot of time and effort in the last year doing all of the human resources kinds of things" to make Rational part of IBM, such as working out responsibilities, he says.

The fact that Rational was an IBM business partner before the acquisition and, like IBM, was focused on large enterprise customers made the transition fairly straightforward, says Jason Bloomberg, a senior analyst at Zap-Think. "It doesn't strike me as being nearly as much of a culture difference as Tivoli or Lotus were when they were acquired," he says.

Since the acquisition, engineers from the Rational and WebSphere Studio teams have worked to create a single team that spans both organizations and is focused on a unified product plan, says Eric Schurr, vice president of Rational marketing at IBM.

On the technology front, IBM has worked to make the Eclipse development platform, which it devised and released in 2001 as open source code, the unifying foundation for its WebSphere and Rational tools. IBM's WebSphere development tools already were Eclipse-based, as were some of Rational's tools.

"What they've been working on in the last year is integrating through the Eclipse standard the remaining parts of Rational and the IBM products," Blechar says. For example, the Rational Rose modeling tools, are slated to include an Eclipse-compliant set of interfaces, he says.

Eventually Blechar expects IBM to move its WebSphere development technologies underneath the Rational brand to consolidate its application development assets.

### Rapid release

A key product focus of the past 12 months is Rational Rapid Developer (RRD), a development environment for building Java 2 Platform Enterprise Edition applications.

First released by IBM in May, RRD is based on a product called NeuArchitect, which was created by NeuVis — a company Rational had bought in August 2002.

IBM and Rational engineers have worked together to repackage the NeuArchitect technology, which provides a single environment for designing, integrating, constructing and deploying Web, wireless and portal-based business applications. The appeal of RRD is that it can automatically construct Java code, masking the complexity and allowing users to focus their efforts on business requirements rather than infrastructure coding.

RRD is the biggest advancement to come out of the IBM/Rational team this year, says Derek Bildfell, COO at Caro Systems, a Toronto application development and management consulting firm — and a Rational partner. "RRD is an automatic construction technology and it takes care of all of the reasonably obtuse things that your average developer wouldn't know how to do," he says.

And RRD is fast. "Our consultants can use RRD to build simple data-oriented applications somewhere around five

had not been rolled up into Rational and now IBM, which has the industry influence needed to get the technology on developers' radar screens.

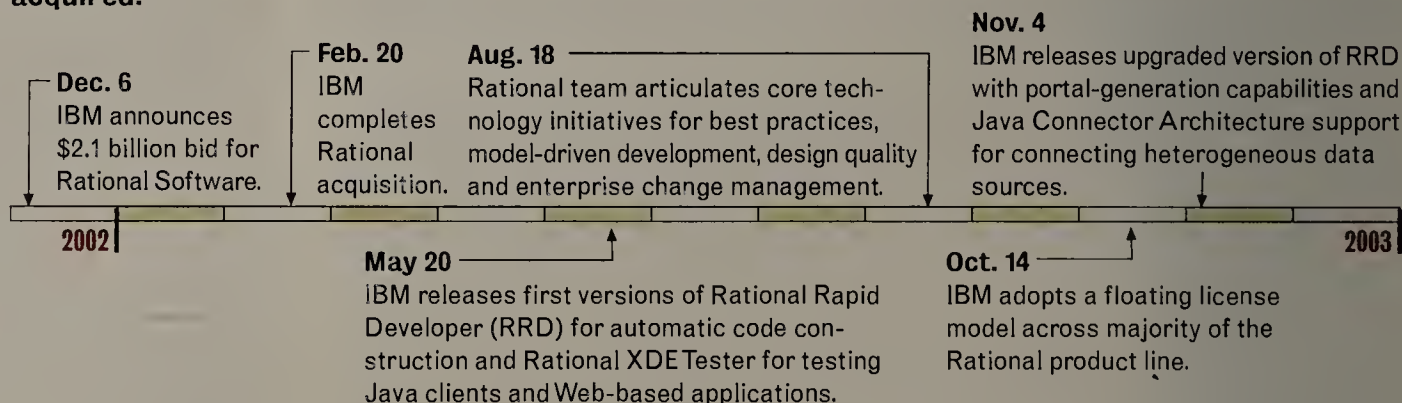
Why is RRD so important? Because it addresses an increasing skills gap, observers say.

Java development projects are growing in complexity, Blechar says. But at the same time, new developers starting to work with Java have fewer skills than their predecessors. "Less sophisticated developers are now trying to build even more sophisticated Java. And people are struggling," he says. "RRD is what bridges that gap."

Caro's Bildfell says RRD can help combat the trend to farm out software-construction processes to outsourcers. RRD is a model-driven tool that supports iterative software design, which calls for simultaneously addressing design, construction and testing rather than tackling each task separately and consecutively. Model-driven design reduces companies' inclination to use offshore development because code construction occurs in parallel with other development phases, Bildfell says. "Everything

## Rational endeavors

Over the past 12 months, IBM has completed its Rational purchase and enhanced the technology acquired.



times to 10 times as fast as if they were coding in standard line code," Bildfell says.

Caro tested RRD's speed by coding the same project twice. Engineers first built a moderately complex security component in Java using standard line coding, which took four months. Caro then built the same product using RRD in less than a month, Bildfell says.

"It was one guy, and he didn't have to go to anybody to say 'how do I connect to this or that?'" The translation was a simple export and import of a translation file," he says. "Over the course of the monthlong project, it made about a \$10,000 difference in the build cost."

RRD is impressively faster than traditional code writing, agrees Salil Deshpande, CEO of The Middleware Company, an application development consulting firm. In tests, RRDaced other code-writing methods by a factor of nine or 10, Deshpande says.

The Rational line includes other code-generating tools, such as the Rational Rose visual modeling tool, but RRD goes further, says David Herst, a senior technology partner at The Middleware Company. RRD builds a true architectural model and generates code implicitly — all a user has to do is fill in the bits that represent the business logic, he says.

Deshpande says NeuArchitect "would have just died" if it

Rational is doing takes away from the construction project," he says. "RRD is very pro North America."

### Internal efficiencies

Rational also has a role inside IBM, particularly with respect to the company's four other software brands: WebSphere, Tivoli, DB2 and Lotus.

Steve Mills, senior vice president and group executive of IBM Software, is driving his team to develop more modular, reusable components that can be shared across IBM software lines to reduce coding efforts and get new products to market faster.

IBM is making its modeling, requirements management and testing capabilities available as components to other software teams. For example, WebSphere Studio now contains a basic diagram feature from Rational that lets developers visualize the class diagram structure of their code. Rational also supplied IBM's Tivoli team with testing capabilities that could help users find software defects earlier in the deployment process, says Roger Oberg, IBM's director of market management for Rational products.

"You'll see more of this code sharing, not just because it reduces development expense if we're all not reinventing the wheel, but also because it delivers a more consistent middleware experience to the customer," Oberg says. ■



# Service Providers

■ THE INTERNET ■ EXTRANETS ■ INTEREXCHANGES AND LOCAL CARRIERS  
■ WIRELESS ■ REGULATORY AFFAIRS ■ CARRIER INFRASTRUCTURE DEVELOPMENTS

## Short Takes

■ **MCI** last week launched its **IP VPN Broadband service**, which lets users securely connect remote and small-office locations. The service includes preconfigured network gear, which is shipped to customers. Customers can use existing DSL or cable modem services to connect to their corporate VPN via encrypted tunnels or MCI can provision service. MCI, which is expected to emerge from bankruptcy in January, offers customers its Internet DSL Office and Solo high-speed services, which are available in 55 markets.

■ **Verizon** has tapped **Advanced Fibre Communications** as one of four vendors to supply fiber-optic and electronic equipment for Verizon's **Fiber-to-the-Premises build-out**. AFC will provide the central office and premises optical electronics for the project.

Verizon also has selected **Sumitomo Electric Lightwave, Pirelli Communications Cables and Systems North America, and Fiber Optic Network Solutions** to provide the fiber-optic cabling and other outside plant equipment for the project. Verizon's initial FTTP deployment plans involve passing about 1 million homes in 2004, with the deployment pace potentially doubling in 2005. Verizon will install FTTP by connecting existing homes and businesses to the company's network as they order services that use the new technology; and installing fiber-optic lines to many new residential developments and business premises as they are being built.

■ **Hitachi** and **Casio** are planning to merge large parts of their respective cellular handset operations into a new joint venture. The new company, which has yet to be named, will be established in April and will handle design and development of new cellular telephones and procurement of parts. Ownership of the company will fall 51% to Casio and 49% to Hitachi.

## RBOCs eye data opportunities

Ability to offer long-distance is key to tapping multibillion-dollar market.

■ BY JIM DUFFY

As the regional Bell operating companies continue to win broader permission to offer long-distance services, they are assembling strategies to attack an enterprise business market that represents billions of dollars in untapped revenue for the carriers.

The ability to offer long-distance within their regions lets the RBOCs serve not only as a business' local exchange carrier, but long-distance carrier as well. With that comes the opportunity to offer lucrative

data services such as frame relay and ATM, an opportunity that previously has gone to interexchange carriers such as AT&T, MCI and Sprint.

Frame relay alone is a \$15 billion business, according to market research firms.

"We realize there are segments in the upper end of the large-business market where we do not compete. So we look at that market opportunistically," BellSouth CEO F. Duane Ackerman said during a Nov. 10 analyst meeting.

Large businesses account for only 17% of BellSouth's overall Communications

Group revenue, or about \$3 billion annually. Yet the large-business telecom market in BellSouth's region is worth \$10.1 billion and growing at about 2% annually.

BellSouth already has had some success in this market. It has landed 5,500 long-distance contracts valued at \$600 million with large companies in its region, Ackerman says.

The carrier also is investing in network VPN and metropolitan Ethernet services, IP PBXs, IP Centrex and softswitch equipment, and an in-region IP backbone. But

See RBOCs, page 26

## Portability deadline has arrived

■ BY DENISE PAPPALARDO

The FCC mandate that lets customers port wireless telephone numbers to any service provider is expected to go into effect today.

Users are promised unprecedented flexibility and choice with this capability, which will cost the wireless service provider industry more than \$1 billion when all is said and done, according to the Cellular Telecommunications Industry Association.

Until this week, users had to forfeit their wireless telephone number if they wanted

to switch providers. Now users in the top 100 markets must be allowed to take their numbers with them.

Through a series of checks and balances, wireless and local service providers are working with a number of third-party providers to help facilitate the porting process (see graphic). If all goes well, users should expect their numbers to be ported in about two-and-a-half hours from the time the process is initiated.

Some carriers will support only porting requests during certain times of day. This means users will not have their numbers

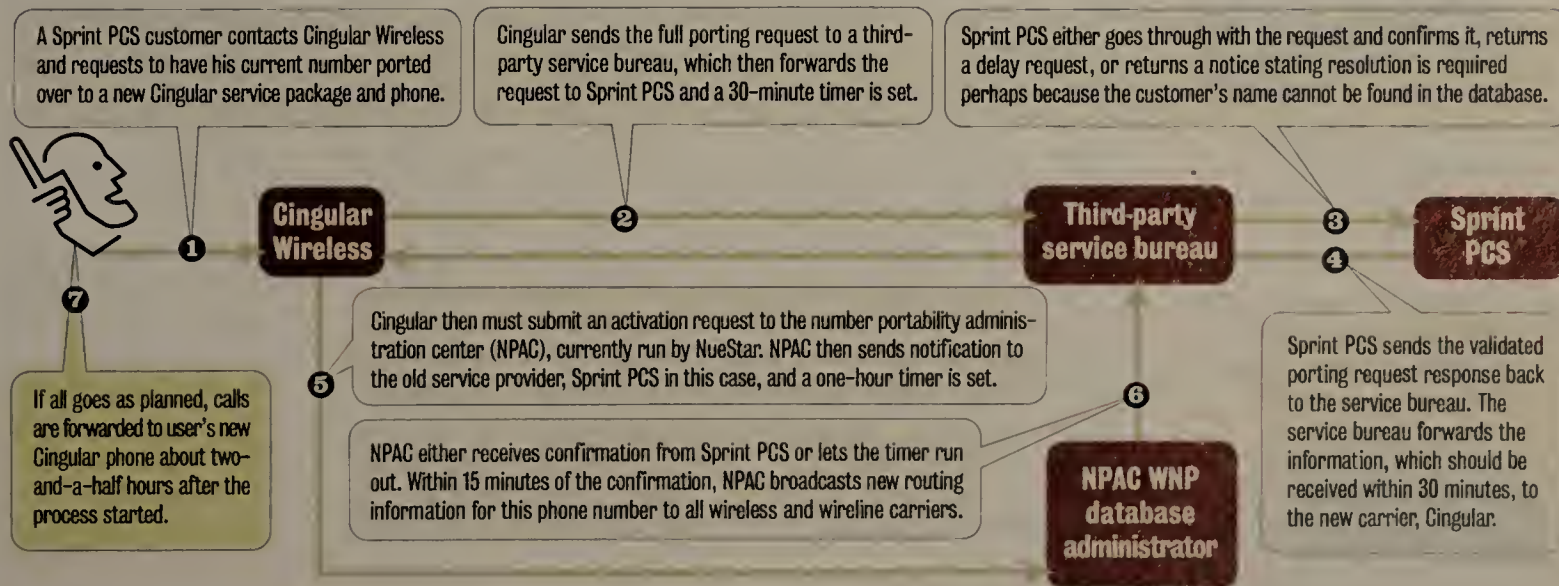
ported in a few hours from the time they request the switch, but a few hours from the time their new provider places their porting request.

Wireless service providers are expected to support porting in the remaining markets throughout the U.S. by May 2004.

Based on an FCC order that was issued earlier this month, service providers also are expected to support wireline-to-wireless local number portability beginning today. This will let users move their landline telephone numbers to their wireless carriers if they choose. ■

### How wireless number portability works

Today users in the top 100 markets can have their wireless phone numbers ported to the carrier of their choice. Here is a look at how these requests are handled.





## EYE ON THE CARRIERS

Johna Till Johnson



It's here: Wireless local number portability is expected to arrive today in most major metropolitan areas in the U.S. (and in May next year for the rest). In case you've been living with wolves for the past 10 years, wireless number portability refers to a user's ability to retain the same cell phone number when switching service providers.

It's usually touted as a consumer benefit, but there's a whopping effect on businesses. WNP could carve 20% to 35% off your organization's existing cellular service costs — starting as early as next month.

Here's how. Over the years, many companies have chosen to fragment their cellular expenses, letting each user select a preferred service, and reimbursing the user directly, either per call or as a flat-rate

## Wireless number liberation is upon us

stipend. A main reason for doing this was user resistance to losing numbers. The advantage to this approach? Administrative simplicity. The cost, however, was inflated rates: Because each user purchased an individual service, discounts were limited to nonexistent (some figures say the average business has cellular discount rates of no higher than 15% to 20%).

With WNP, businesses finally can offer users number retention while delivering discounts to the bottom line. By offering all your cellular business to a range of providers and encouraging them to compete, you should be able to reap discounts of 40% to 50%.

To ensure your negotiation and transition process goes smoothly, though, you'll need to do some legwork. Here are some items to tackle before launching your project:

- **Calculate your coverage requirements.** You should take a good look at the geographies in which you require coverage, because it makes no sense to switch to a less expensive provider if the service is dicey. Submit your RFP only to providers

that can meet your coverage needs.

- **Perform a user feature-set audit.** With WNP, you might need to ask your users to switch phones. That can be surprisingly problematic: Phones are personal, and

a significant number of phones will need to be replaced, see what kind of buyback deal you can get — particularly since you'll probably be upgrading to newer, more expensive phones.

**By offering all your cellular business to a range of providers and encouraging them to compete, you should be able to reap discounts of 40% to 50%.**

each user typically has a preferred set of features — like specialized rings or one-button “walkie-talkie” dial — that they don't want to lose. A painless way to conduct the audit? Set up an intranet page with a poll and an opportunity to comment. Ask users which features they value most and if they have preferences regarding new phones. By working with them instead of against them, you'll win support in the field.

Speaking of phones, negotiate for a trade-in with your new provider. If it turns out that

- **Explore futuristic alternatives.** As phones and handheld data devices continue to converge, options for converged applications grow. Don't hesitate to grill providers about their plans and strategies for next-generation voice/data services.

Good luck with your negotiation, and please let me know how it goes.

*Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.*

### RBOCs

continued from page 25

Ackerman acknowledges that BellSouth cannot meet the needs of “the highest of the high-end” enterprise customer.

That's where many thought AT&T, with its nationwide frame relay and ATM data network, might help BellSouth. According to published reports, the two were discussing a merger for

some time before BellSouth walked away, reportedly believing that \$19 billion was too high a price.

On the analyst call, Ackerman said that BellSouth would continue to target customers with headquarters in BellSouth's nine-state region in the Southeast, position itself more as a data networking provider, and leverage partnerships with Cisco and IBM.

The in-region focus is where BellSouth is strong — and weakest, according to analysts.

“In the long term, shoring up in-region revenue could put BellSouth on the defensive and make it more difficult for the carrier someday to go after market share outside its region,” said Brian Washburn, an analyst at Current Analysis, in a recent report on BellSouth. “If it's going to compete with the likes of AT&T and MCI (and potentially SBC and Verizon) sometime beyond the foreseeable future, BellSouth will need to get into mergers and acquisitions or expensive network builds, which are both risky strategies that could backfire.”

SBC also is looking to grab a greater share of the \$34 billion enterprise opportunity in its region, says CEO Ed Whitacre. But in addressing analysts two weeks ago, Whitacre acknowledged that the ability to offer long-distance is the key. “Long-distance . . . allows for expansion into the enterprise market,” he said.

Analysts agree.

“Now that SBC has long-

distance approval across its region, the company is extremely focused on improving its market share in the enterprise market,” says UBS Warburg analyst John Hodulik. “In the large-enterprise segment, SBC is after about half of the Fortune 500 companies that reside in the company's region.”

SBC has long-distance penetration in eight of the 13 states in its region. The RBOC was just granted approval to offer long-distance in five Midwest states.

The carrier already has nationwide ATM/frame relay and IP networks built out. So as its long-distance offerings penetrate even farther into its region, so do its data services.

That's why, with 49% of the Fortune 500 located within its footprint, SBC considers the enterprise market “the most exciting segment” of its business, says Ray Wilkins, SBC group president for marketing and sales.

As examples, he cited frame relay contracts with four companies he did not name: a five-year, \$350 million nationwide network connecting 4,000 sites and 11,000 routers; a three-year, \$9 million, 580-site network for a company with headquarters outside yet with a significant presence inside SBC's region; a three-year, \$10 million, 221-site network for a company present in six states — five of which are within SBC's territory; and a three-year, \$10 million, 104-site contract with a fourth company.

### RBOC data push

Progress of BellSouth and SBC:

#### BellSouth

- Landed 5,500 long-distance contracts valued at \$600 million.
- Continuing to invest in network VPN and metro Ethernet services, IP PBXs, IP Centrex and softswitch equipment, and an in-region IP backbone.
- Build up its ability to address the needs of “the highest of the high-end” enterprise users.
- Continue to target companies with headquarters in nine-state region in the Southeast.
- Leverage partnerships with Cisco and IBM.

#### SBC

- Bank more heavily on its partnerships with Cisco, IBM, HP and EDS.
- Build on its \$5 billion share of the \$34 billion opportunity with 49% of the Fortune 500 in its region.
- Increase long-distance penetration in seven of the 13 states in its region and begin penetration in the Midwest.
- Leverage nationwide ATM/frame relay and IP data networks.

Verizon and Qwest also recently have announced progress and initiatives in the large-enterprise market. Verizon has landed 800 national contracts over the past year through its Enterprise Advance initiative. The average contract length is 2.5 years, and customers include 59 out of the Fortune 500 companies, says Larry Babbio, vice chairman and president of Verizon.

Qwest recently announced that it now can offer long-distance data and IP services, in addition

to voice, to businesses and government agencies in most of its 14-state region. Qwest also announced that it is acquiring certain assets, such as fiber routes, from Touch America and 360networks in order to support this long-distance data initiative.

The ability to offer long-distance data to large corporations within its region opens up a \$6 billion market opportunity to Qwest, says Cliff Holtz, executive vice president of Qwest business markets group. ■

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# Net.Worker

■ PRODUCTS, SERVICES AND STRATEGIES  
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## Telework eases turmoil of acquisition

Mapics' acquisition of Frontstep created an opportunity for employees to work out of virtual offices.

■ BY TONI KISTNER

Mapics' investment in telework paid off big this year when the company acquired another software developer, Frontstep. Both developed ERP applications for the manufacturing industry and had offices scattered worldwide. But in the early 1990s, Mapics — a spinoff from IBM — began experimenting with telework and since has used it extensively to reduce facilities costs in the down economy. In March 2002, Mapics shut down its lab in Woburn, Mass., converting it to a virtual office.

"Rather than lay people off, we sent them home. That unleashed remarkable changes across our business," says Sandy Hofmann, Mapics CIO and chief people officer.

Buying Frontstep in February brought Mapics a new set of challenges. Overnight, the firm went from 450 to 1,100 employees, with 35 locations. The goal was to take the best practices of each firm, eliminate redundancies and pare down the new company to 720 employees with 17 sites. Again, the company turned to telework, relying on technologies and strategies it

had honed in the past.

On Day One, Mapics had to appear as one company, even though Mapics and Frontstep had different network operating systems, e-mail systems and applications. Jim Overdorff, Mapics technical services director, used mail-forwarding techniques to send both companies' e-mail to Mapics' Lotus Domino servers and routed the companies' Web traffic to one site. Mapics' extensive use of VPN for remote access made it relatively easy for Overdorff to set up a point-to-point VPN between the two networks that let the businesses transfer data behind each company's firewall. "We still had to gain permissions to each other's networks, but it opened a gateway," he says.

Since February, the Mapics integration team has analyzed each company's systems, processes and applications — as well as facilities and business units — and selecting the best to use in the new Mapics.

### Company portal eased transition

One key to making the acquisition a success was Mapics' portal, which provides corporate information, policies, organizational

charts and training information.

"We used the portal to help keep everybody connected and to establish a cultural norm. Two different cultures coming together will have differences — geographic differences, the South vs. the Midwest," Hofmann says. "And since many of us came from IBM, we still bled blue. We have a lot of formal management policies in place, where Frontstep didn't. We wanted to make sure the new employees got a sense of what Mapics was like."

In consolidating offices, Mapics rolled out its existing telework policies and guidelines to each office. The integration team would meet with each department via Web conference and ask, "What is your choice, to continue using this facility, to consolidate people, or to virtualize? What do you need to run the business? Our goal is to get down to 17 offices, and reduce office space by 25%. Tell us why we can't get there," Overdorff says.

He says closing the Woburn facility last year was an invaluable experience. "I met with 10 tech people who were all looking at me with daggers. Each had his arms crossed, leaning back in the chair, glaring at me," he says.

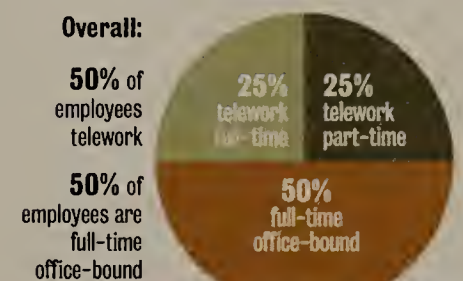
To ease the tension, Overdorff had the group brainstorm every reason they thought the virtual office wouldn't work. "One would say, 'I compile objects together and my home system doesn't have enough processing power.' I'd say, no problem, we'll get you a more powerful system. Another would say, 'Customer support needs three-way calling and call forwarding; you can't do that from home.' I'd say, we can order that service from the phone company. We just addressed each one, going down the line," he says.

Even so, Overdorff and Hofmann met resistance from Frontstep. "At first there was some trepidation, to use a mild word," Hofmann says. "It's frightening for people. A lot of these jobs have a very social nature. So we got some Mapics people who'd been successful moving to a virtual office to talk to them, to say, 'Hey, this is a piece of cake, life is good.'"

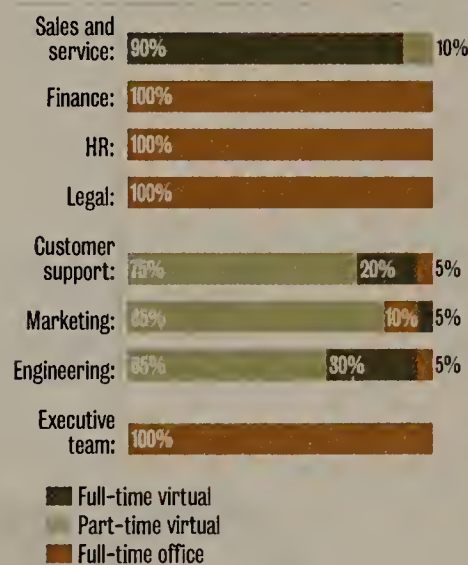
Bill Lilegdon, Frontstep's director of strategic extensions, had been driving to work in Indianapolis for 24 years. He traveled often and didn't use remote collaboration tools. When he started working from home in a basement office, he realized he still needed to go somewhere in the morning, create

### Mapics telework breakdown

After going through an acquisition, Mapics' goal was to reduce office space by 25%. The company did so with telework.



### By department:



that separation from home and work, so he drives his daughters to school. Because his wife is home during the day with their baby, he finds the hardest thing is to get his family to understand when he's home working and when he's home not working.

He says he suffered from a little denial at first. "I didn't get a home phone line for a while; I just used my cell phone. But it's really great now. We have a lot of family in the area, and it would be a big deal if we had to relocate. It's much better to work where you want to live," he says.

"It's hard to scoff at the results you get from people," Hofmann says. "We spend more time trying to make sure people stop working. If they work too long hours, they make mistakes and don't realize it. Quality suffers. We have to teach them that."

Overdorff agrees. "I tell people, at the end of the day, unplug the phone, wrap a cord around it and push it aside. You have to shut yourself off, realize the day is over. We don't want to burn people out," he says. ■

## Short Takes

■ **SMC Networks** recently began offering its high-power 802.11b PC card to consumers. The **Elite-Connect SMC2532W-B** transmits data with up to 200 milliwatts of power. The company says high power helps extend the device range to 2,700 feet, nearly three times farther than standard 802.11b clients. Security features include 64/128-bit Wired Equivalent Privacy encryption, Wi-Fi Protected Access and RADIUS authentication schemes. The PC card costs \$70.

■ **Netgear** recently announced an 802.11g access point for small to mid-size businesses. The **WG302 Pro-Safe 802.11g Wireless Access Point** works with 11M bit/sec 802.11b and 54M bit/sec 802.11g clients, and

the company's SuperG 108M bit/sec connections. Security features include 152-bit WEP encryption, media access control address authentication with 256-user access control list and VPN pass-through. The access point supports Power over Ethernet, so you can power it via a 10/100 PoE-enabled switch. Features for larger WLANs include support for Wireless Distribution System, point-to-point and multipoint bridging and repeater functionality, the ability to operate as an access point or bridge, and remote management via Web, SNMP or Telnet. Available next month, the device costs \$350.

■ **Comcast** launched **Comcast Teleworker**, cable broadband service geared to firms with large numbers of remote employees. The service includes access to corporate VPNs, and business-class customer service. Comcast also offers Comcast Pro, cable service for individual teleworkers and power users that offers high speeds and additional IP addresses.



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# Technology Update

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

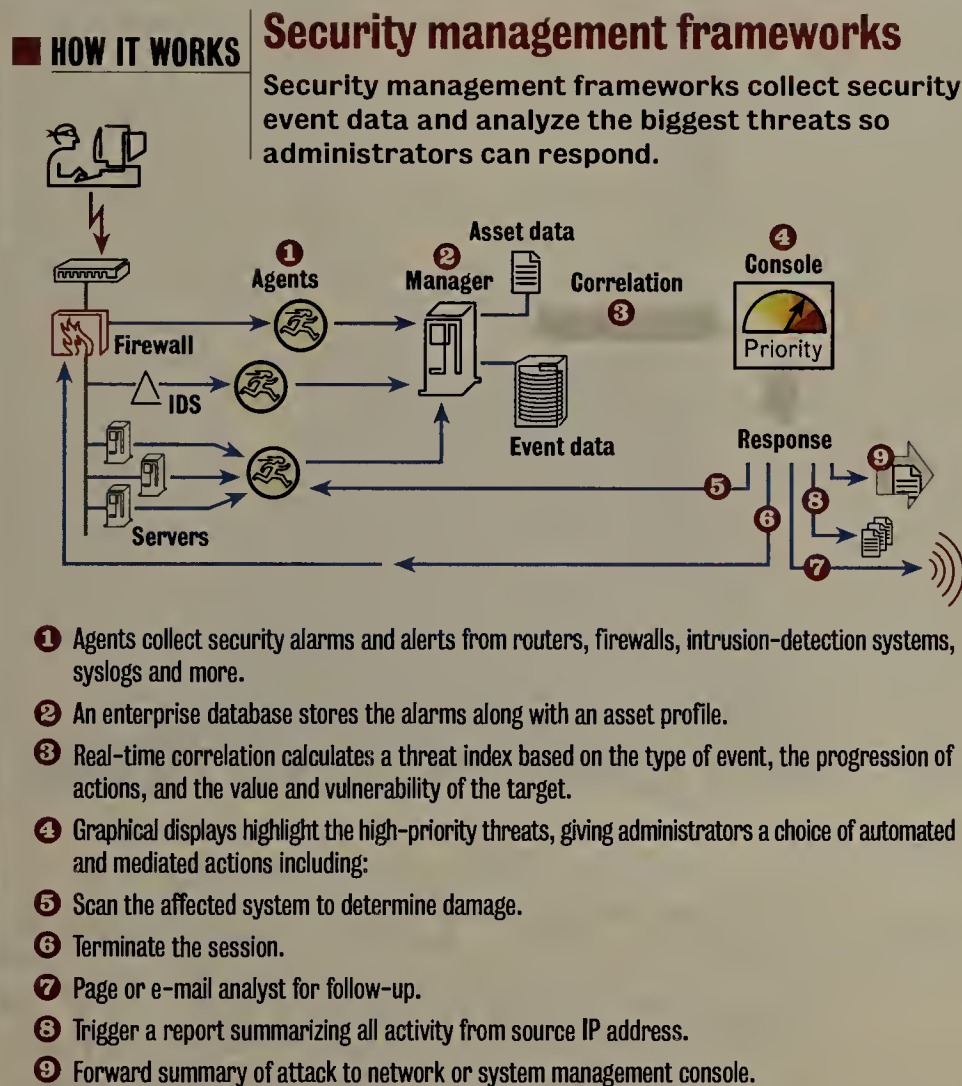
## Frameworks coordinate security

■ BY LARRY LUNETTA

Companies rely on a variety of security products, including firewalls and intrusion-detection systems, to monitor, investigate and report on the many types of security issues that are experienced each day. Typically these devices come from many vendors, as organizations seek best-of-breed products. But because each device type and vendor has its own message, log and console format, as the security infrastructure is built out, it becomes increasingly difficult to understand the output of individual or even groups of devices and assemble a complete picture of an organization's threat profile.

To obtain maximum value from these heterogeneous devices, they must be assembled into a system that provides the necessary intelligence and tools to deal with millions of alarms and alerts per day. Security management frameworks provide a coordinated component set that collects security data from the network, puts it in a common format, stores it in a database and executes a range of analysis, display, response and reporting tasks.

A security management framework consists of software agents, server-based managers and consoles. Agents can be deployed on the security devices, network devices and applications that report security events at aggregation points or as listening posts for SNMP broadcasts. The agents forward the data to server-based managers that consolidate, filter and cross-correlate the events, using a rules engine and a central database. These managers report relevant information to consoles, where security professionals monitor events, receive notifications and perform



incident investigation and response. Consoles are available as applications for dedicated workstations or via a browser-based interface for remote access.

Together, these components represent a complete framework for detecting and responding to security threats or attacks.

One database stores all security events, and the console presents all security activity in a manner that can be responded to immediately, according to an organization's individual security policy.

Real-time correlation is the key element in an effective security management

framework because it automatically examines and analyzes millions of events per day. It works by reading the original alarm or alert message, parsing it for its individual fields and putting those fields into a common format, or schema. These messages, which are being forwarded by the collection component, then are assigned to the proper priority level — real-time correlation assigns them by combining the threats that the firewall or IDS identifies with information about the targets, or assets. The correlation system contains a rule set that scores the threat according to:

- **What else has occurred?** It's one thing to know a set of packets is dangerous, but another to see that the packets reached the intended target.

- **Is the asset vulnerable?** Many organizations use vulnerability scanners to search their networks proactively and report specific vulnerabilities to known exploits. An immediate reference to this information stored in an asset table will indicate whether the target is vulnerable to a particular attack. The threat score is adjusted accordingly.

- **How valuable is the asset?** Asset value describes the role of the target, what kind of data it manages, and what applications run on it. The more valuable the asset, the higher the priority of the alert.

Because the point of all this is to take the right action at the right time, the organization can set up policies to govern automated responses and responses acted on by staff.

*Lunetta is vice president of marketing and business development for ArcSight. He can be reached at llunetta@arcsight.com.*

## Ask Dr. Internet

By Steve Blass

**Your recent column on Eggdrop bots (www.nwfusion.com, DocFinder: 8543) was timely. We have a client that keeps getting Eggdrops installed on it. In the most recent case you could tell they were there only by the log files and by the fact that when you emptied the Recycle Bin it complained that directories that did not show up in the listing were not empty and could not be removed. Is there any way under Windows to reveal these directories without booting into Linux?**

Sometimes you can see parts of the directories if Windows is set to show all system and hidden files. Using Search to look for files also seems to work. All the Eggdrops we've found so far include fport.exe, tlist.exe, plist.exe and pskill.exe. Sometimes Norton and McAfee will pick up an infection in csrss or Explorer. Do a Google search on "aysshell.exe" for links to variations on the theme that several universities have documented. Use the free Process Explorer available at [\[ternals.com\]\(http://ternals.com\) to show a tree view of the running processes and files they have open. Even if Eggdrops are installed under svchost, you can see the net commands being issued by the Trojan. From there, you can kill the process and hunt down the files.](http://www.sysin-</a></p>
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*Blass is a network architect at Change@Work in Houston. He can be reached at [dr.internet@changeatwork.com](mailto:dr.internet@changeatwork.com).*



GEARHEAD  
INSIDE THE  
NETWORK  
MACHINEMark  
Gibbs

**A**fter two weeks' worth of columns we still are obsessing about VMware and for good reason — it is perhaps the coolest operating system utility we have seen for a long time. Last week we concluded with: "There are interesting options to disk access but they'll have to wait until next week." Next week is here and now ...

Under VMware Workstation, guest operating systems can directly access the host operating system's hard disk. This is only for the experienced user, as direct host disk access is not constrained in any way, and wiping out the host disk is entirely possible. If you want access to the host disk subsystem you would be better off going with Server Message Block shares.

One of the cool things about guest operating systems under VMware Workstation is you can take a snapshot of the virtual machine. A snapshot captures the contents of a virtual machine's memory along with its settings and the state of all the disks associated with the virtual machine, but

## More VMware intricacies

you can have only one snapshot per virtual machine. When you save a snapshot, it replaces the current one.

This is useful because if something goes horribly wrong with a virtual machine — say, an application runs amok — you can revert to the last snapshot and the virtual machine will be reset to the state it was in when the snapshot was taken.

Snapshots can be locked to prevent accidental overwriting. You can control the handling of the virtual machine power-off process by specifying that the snapshot shouldn't be modified, that the last snapshot should be restored automatically, that the snapshot should be updated automatically or that the user should be asked what to do.

You also can create a virtual machine that always starts quickly in a known state by suspending the virtual machine when it is in a desired state and taking a snapshot. You then configure the power-off action to revert to that snapshot so every time you "power on" the machine it will be in that saved state.

We installed VMware Workstation under Red Hat Linux 9. For our first virtual machine we set up Windows XP Professional. We put a bootable DOS disk in the physical floppy drive and the Windows installation

**One of the cool things about guest operating systems under VMware Workstation is you can take a snapshot of the virtual machine.**

disk in the CD-ROM drive and powered up the virtual machine. It worked like any other XP installation.

In the first part of this series on VMware we mentioned support for floppies and CD-ROM drives. What is particularly interesting is that these can be physical or virtual devices, and a virtual CD can be a VMware file or an ISO image file (this is a file that contains the complete image of a CD created by copying an entire disk).

Where this feature becomes particularly useful is that you can boot from a physical or a virtual CD-ROM drive by simply setting up the VMware Workstation's virtual Phoenix BIOS appropriately. We could have performed our Windows installation without the floppy boot.

We downloaded an interesting Linux variant called Knoppix that we thought would be interesting to run as a guest under VMware. Knoppix is distinguished by it's an extensive GNU/Linux distribution that boots and runs completely from CD.

Knoppix is a K Desktop Environment version of the Debian Linux distribution stripped down to fit on one CD, and it includes a huge amount of software. Note that there also is a variant distribution of Knoppix that uses the Gnome desktop environment instead of KDE called Gnopix. Anyway, Knoppix is available as an ISO image, so we created a virtual machine and set the virtual CD-ROM to be the first boot device and to use the ISO image file. We then powered up the virtual machine, and Knoppix came up immediately.

Then we ran the Knoppix hard-disk installation routine and created a full-blown Debian-based Linux system running alongside XP Professional under VMware Workstation running on top of Red Hat Linux 9. Everything has run smoothly to date, and the performance is great. It doesn't get much better than this.

*Rampant enthusiasm to gearhead@gibbs.com.*



## Cool Tools

Quick takes  
on high-tech toys  
By Keith Shaw

**O**n page 36 of this week's issue, you'll find our fourth annual "Cool Yule Tools" holiday gift guide. Once again, *Network World* editors and staffers got their hands dirty and tried out more than 100 different gizmos, gadgets and other high-tech widgets in order to present our picks for your holiday wish list. The print guide is just a taste of what we saw — our online guide presents the full reviews and our After Hours section highlights the 21 best computer and video games.

This year's crop of products was different from previous years in that there wasn't anything that blew me out of the water. Many manufacturers seem to be playing it safe — they're taking a standard product and adding some extra memory or speed to it, or adding only a couple of new features.

But we still learned a lot from our testing:

- Wireless LAN installations (on the client side) have gotten easier. This is thanks in part to Windows XP

**AOC's 19-inch flat-panel monitor is one of several great products we received from non-mainstream companies.**



## Gift guide shows firms playing it safe

and its way of configuring to an 802.11b network, but the vendors making wireless gear also have improved on their ease of installation. We had no problems this year trying to connect any of our wireless gear, either on the client or the infrastructure side. With the alphabet soup of wireless standards calming down (for the moment), the time is right to go out and get some 802.11g network equipment.

- **Flat-panel monitors are still pretty cool.** We got several models this year, and staffers who hadn't yet tried to install or see the quality of a flat monitor were duly impressed. Prices are coming down so much that soon everyone should have one of these nice-looking devices on his desk.

- **USB devices go high-tech.** Sure, storage is cool, especially when you can transfer tons of data on a tiny USB device. But more manufacturers are putting applications on the devices, such as security software. We loved the Kanguru Wizard, a \$50 USB device that could create a virtual drive to hide your most sensitive or confidential data. When you unplug the device, the data "vanishes."

- **DVD burning not there yet.** We highlighted this a few weeks ago — the confusing mass of DVD standards (plus, minus, R, RW ...) and the length of the video-capture process means it will be a while before this hits mass adoption. Only die-hards have the patience to try to convert videos to DVD.

- **Don't be afraid of small manufacturers.** We got a bunch of great products from non-mainstream companies. The AOC 19-



**Freecom's Beatman Flash MP3 recorder holds up to six hours of music with optional SmartMedia Card.**

inch LM729 LCD flat-panel monitor was impressive, as was the Beatman Flash MP3 recorder from Freecom. Just because you can find it at Best Buy doesn't mean it's the best product out there. Even HP sent us some duds this year. Take the time to search the Web for products, and a few gems could surprise you.

- **We can't test everything.** We get hundreds of submissions for the gift guide, and we always feel guilty if we can't test everything. This includes this year's most offbeat submission — the HeartStart Home Defibrillator from Philips Medical Systems. The \$2,300 device lets regular people help if someone is having a heart attack. The company sent us a resuscitation dummy to practice on, but we felt that the product just didn't fit the view of what a "Cool Yule Tool" should be (frankly, it scared the heck out of us). For more information on the device, go to [www.medical.philips.com](http://www.medical.philips.com).

*Shaw can be reached at [kshaw@nww.com](mailto:kshaw@nww.com).*



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Quantum







## EDITORIAL

John Dix

## An automated answer to worms?

Last February we discussed an interesting security device from ForeScout Technologies that sits next to the firewall, tracking hacker reconnaissance efforts and then shuts down attempts to break in using information gleaned during that recon.

The company promised to complement that product with a box designed to combat internal threats. On Monday it did just that, but instead of positioning it as a way to fight hackers, the new product is called WormScout and, as you can guess, is designed to fight worms.

Why the switch? Selling the outward-facing ActiveScout has been harder than anticipated, admits CEO Kent Elliott. ActiveScout provides intrusion-prevention services but isn't a classic intrusion-prevention product because it doesn't require signatures and doesn't have to be implemented inline. The extra customer education required makes the sales cycle longer.

But the appeal of a security device that helps keep out bad guys, is simple to operate and doesn't generate thousands of false positives has earned ForeScout 130 customers, from regional credit unions to Fortune 500 shops.

More impressively, Elliott says all customers have enabled the automatic blocking feature of ActiveScout, meaning the systems simply are shutting hackers out. That's quite an achievement because few organizations will let security products respond to anything without human review for fear that some good traffic will go out with the bad.

While ActiveScout is taking off slower than anticipated, Elliott thinks it has a good future, but he is even more jazzed about WormScout.

Although the core technology is essentially the same in both products, Elliott says the worm problem has become so rampant that it made more sense to play up the worm-containment features with this new product instead of the anti-hacking benefits.

WormScout installs either in front of assets you want to protect, such as core servers, or in front of groups that are prone to worm attacks, say sales representatives who travel with their laptops.

A worm typically searches for one type of port to exploit, such as SQL or User Datagram Protocol (UDP), so when WormScout sees something looking for Port X on IP address 1, then 2, then 3, etc., it responds offering the service sought. When the worm tries to take advantage of that resource, WormScout uses TCP reset to stop the session or invokes the help of other LAN devices to isolate the offending party.

Anything that automatically stops worms can only be a good thing, especially given the speed at which these things spread.

— John Dix  
Editor in chief  
jdix@nww.com

### Additional surcharges

The story "Fighting back against telecom surcharges" (www.nwfusion.com, DocFinder: 8623) primarily discusses the universal service fee passed on by carriers. In addition to this surcharge authorized by the FCC, businesses and individuals should be mindful of fees such as the end-user port charge, local number portability charge, federal subscriber line charge, access line charge and pre-subscribed interexchange carrier charge. These charges can comprise up to 35% to 45% of the total cost associated with a business line. These noteworthy charges often are not taken into account when negotiating carrier contracts, considering alternate technologies, or reviewing total telecom costs.

Sameer Hilal  
COO  
VCOM Solutions  
San Ramon, Calif.

### Becoming better users

Regarding "ISPs ratcheting up their anti-spam efforts" (DocFinder: 8625): If we do not teach people to be better computer users, all the tools in the world won't stop the spam problem.

I teach classes on e-mail and Internet usage, with a focus on safe practices. Several hours of focused training goes a long way toward preventing usage patterns that aid and encourage spam.

The anti-spam tools are as bad as the spam. I run a mail server, and all of the blacklists and filters are giving me fits. If I send a dozen book-hold notifications to an ISP that serves my library patrons, it is quite likely that the mail will be rejected as spam because it hits their mail server as a group of messages similar in size and composition. My mail server was

*E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.*

# opinions!

blacklisted by one ISP simply because my domain name contains an "x."

Vern Mastel  
Technology coordinator  
Bismarck Veterans Memorial Public Library  
Bismarck, N.D.

### More to the story?

I read your story on AT&T's tomo-gravity technique ("AT&T touts tool to map IP traffic," DocFinder: 8624) and came away wondering if there was a "Paul Harvey, part II" — the rest of the story. Network professionals have had to deal with lots of data for a long time, and there are tools for summarizing and displaying it. What I was hoping for in the story was an introduction to a tool set that uses the matrix data to predict traffic loading; analyzes data on the fly to discern adverse trends in network performance and project affects; uses a learning engine to look at projected affects and recommend corrective actions; monitors performance after corrective actions are implemented to learn outcome; updates the learning engine; and so on. I presume technology has not yet reached that point.

Bob Segreaves  
President  
VRSC  
Ellicott City, Md.

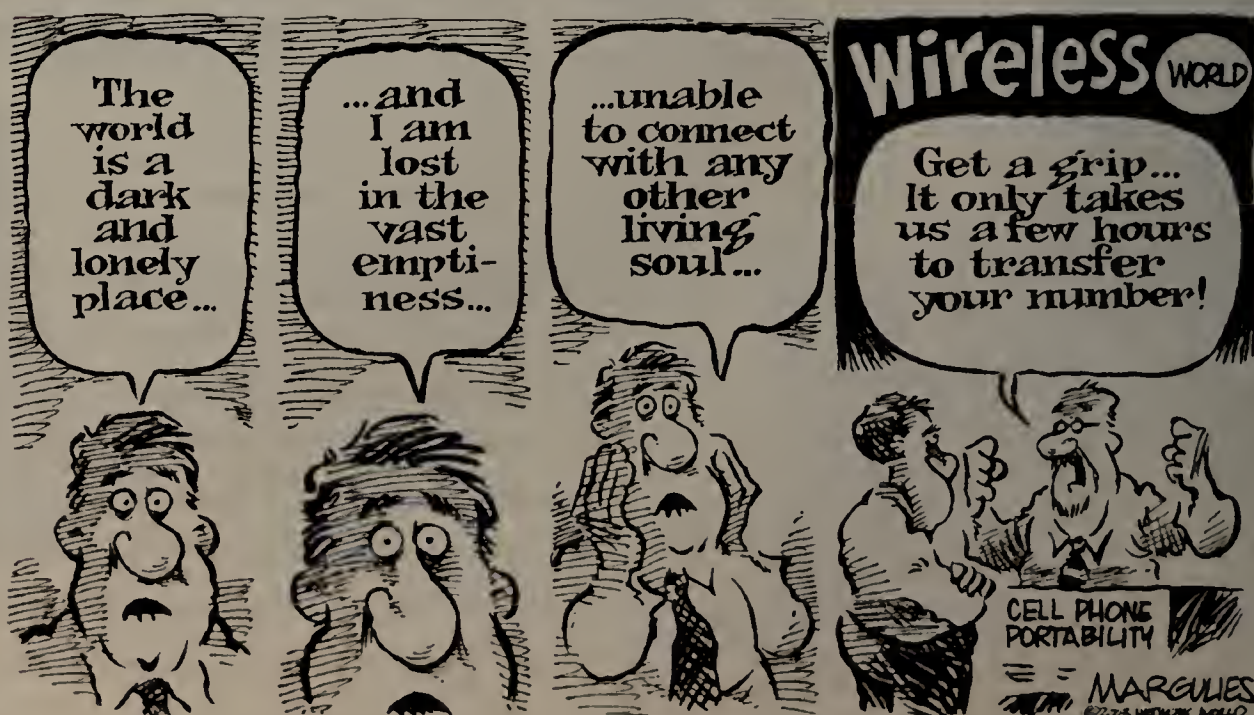
### Not an audit

Your story "Inside a security audit" (DocFinder: 8626) refers to security reviews as audits. Please be aware that an audit is performed only by licensed and accredited auditors on an adversarial basis reporting to the audit committee of the board of directors of an organization. Audits are governed by laws and regulations, and have specific legal standing.

Donn Parker  
Los Altos, Calif



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## VENTURE OVER THE HORIZON

Kevin Fong

**E**-mail has become the primary medium for all business communications and continues to grow at an astounding rate. IDC predicts that the number of person-to-person e-mails sent on an average day will exceed 60 billion by 2006. That number excludes inbound spam, HTML/graphic-based content,

distribution lists and opt-in e-newsletters. This explosion of informal written communications is increasing the costs of doing business.

This situation recently prompted a radical response from John Caldwell, head of Phones 4U, a chain of high-end cell phone stores in the U.K. Caldwell banned all internal e-mail among his 2,500 employees, claiming this move would save three hours per day per employee, and more than \$1.6 million per month.

It's doubtful there will be a widespread adoption of Caldwell's ban. Therefore, companies will continue to face the need to manage e-mail traffic, comply with new Securities and Exchange Commission regulations for e-mail retention, reduce cost of ownership, and improve quality of service and system reliability. The increasingly mobile environment in which employees expect to have access to corporate messaging systems 24-7 puts even more stress on IT organizations. Storage, data protection and disaster recovery also are important concerns.

Message exchange in one form or another has existed from the early days of time-sharing computers. Today's corporate messaging systems have a heritage that harkens back to desktop products that weren't designed for use as large, mission-critical enterprise applications and therefore lack reliability. The challenge for IT managers is to improve

# Messaging goes mission critical

performance while reducing total costs.

Mayfield has invested in several companies that are working on solutions to these problems:

- Cemaphore Systems is developing a product that will simplify Microsoft Exchange and Outlook message management, and let companies centralize Exchange servers, thereby reducing costs.

- Scalix, a company incubated at Mayfield, offers an e-mail and calendaring platform based on Linux. The software is targeted at users who require (or at least desire) a highly reliable messaging platform.

- Mobileway is focusing on expanding the reach of services such as instant messages, infotainment, mobile marketing and m-commerce to mobile users.

- PostX has developed products that let large organizations secure the communication of sensitive information to employees, partners and customers via e-mail and secure Web sites.

- Banter, which provides natural-language automation for the CRM market, extends existing e-mail response applications by providing highly accurate automated-response capability that reduces the maintenance burden of IT personnel.

Many small companies are offering innovative solutions to the problems raised by the dramatic growth of messaging. While it might seem risky to trust a mission-critical application to any company other than an old supplier, it might be more risky to ignore the opportunity to improve service and performance, and reduce costs.

*Fong is a managing general partner with Mayfield, a venture capital firm in Menlo Park, Calif. He can be reached at [kfong@mayfield.com](mailto:kfong@mayfield.com).*

**The increasingly mobile environment . . . puts even more stress on IT organizations.**



## ABOVE THE CLOUD

James Kobielus

**T**he most interesting story from Microsoft's recent Professional Developers Conference wasn't the vendor's future Longhorn operating system, but rather, Microsoft's shift away from two preoccupations of its recent past: .Net and Web services.

Microsoft isn't abandoning the .Net Framework or Web services standards in its development, hosting and interoperability environments. The .Net Common Language Runtime (CLR), .Net class libraries and growing WS-\* standard suite are still expected to be core features of the future Longhorn client and server releases.

But the vendor has distanced itself from the terms .Net and Web services and has incorporated these frameworks in a broader-umbrella architecture associated with Longhorn. This uber-framework, called WinFX, refers to the new APIs and component model underlying the new operating system. WinFX, like .Net, will be supported on prior Windows operating systems through downloadable components.

WinFX will expose the functionality of an important new protocol-interoperability framework — Indigo — that sits at the heart of Longhorn. What's significant about Indigo is that it embraces, integrates and bridges the full range of middleware protocols that Microsoft has built into its operating system.

Within the Indigo environment, the Web services framework (WSF) is the dominant approach, but not the only approach, for integrating applications. Indigo encompasses all core WSF standards and protocols — principally XML, Simple Object Access Protocol (SOAP), Web Services Description Language and Universal Description, Discovery and Integration — and everything else that's being developed under the WS-\* heading. But Indigo also will let older Windows-based applications interoperate with newer WinFX applications.

Indigo uses service-oriented architectures (SOA) to bridge WSF and other middleware approaches and protocols. Fundamentally, an SOA is any interoperability environment in which autonomous applications

# MS shifts from .Net, Web focus

expose their interfaces through standard service contracts, publish these contracts through shared service registries and interact through exchange of messages that contain data in agreed-on schemas, such as SOAP/XML. Indigo leverages these core WSF standards to make SOAs span and bridge WSF and non-WSF middleware environments.

Flexibility is the core architectural feature of Indigo. This new interoperability framework will support loosely coupled WSF and message-brokering interactions among application components, but it also will enable the sort of tightly coupled remote object interactions traditionally associated with DCOM, .Net Remoting and other object-brokering protocols. Indigo will support cross-domain, wide-area application integration across diverse machines, but also will scale down to support process integration within one server. It specifies SOAP/XML as the mandatory in-memory data format, but lets that format be serialized to almost anything you wish for transmission. It spans transports, security systems, messaging patterns, encodings, network topologies, interceptor models and hosting models.

Clearly, Indigo is largely a Microsoft initiative to get its internal middleware house in order. But Microsoft, through its Indigo vision, also seems to be hinting to the industry at large that the WS-\* stack is too narrow. WS-\*, of which Microsoft has been a prime developer, needs to incorporate support for tightly coupled, synchronous object-brokering approaches to support a broader range of integration scenarios.

Indigo convincingly brings object computing into the new world of SOAs. Although a proprietary architecture associated with Microsoft operating systems, Indigo is applicable to SOAs that span diverse operating and application platforms. This powerful new interoperability vision should serve as a blueprint for the future evolution of WS-\* standards.

*Kobielus is a senior analyst with Burton Group, an IT advisory service that provides in-depth technology analysis for network planners. He can be reached at (703) 924-6224 or [jkobielus@burtongroup.com](mailto:jkobielus@burtongroup.com).*

**Indigo convincingly brings object computing into the new world of SOAs.**



# NetworkWorld

## 2003 holiday gift guide



### Silver belles

Santa's helpers, Titanium (above) and Platinum (below), ring in the season with these silver-toned accessories.

#### AOC LM729 monitor \$400

Titanium takes the AOC LM729 monitor for a spin — literally! This 17-inch flat-panel with integrated speakers easily swivels from horizontal to vertical, and at \$400, even the price tag turns heads.

#### Veo Wireless Observer camera \$300

Platinum loves the space-ship design of the Veo Wireless Observer camera, but it's what this baby can do that's really out of this world. Set it up anywhere within range of a wireless LAN, and beam pictures across the Internet (watch the kids, your pets or do security monitoring). Pan, tilt and zoom features make this camera a winner!

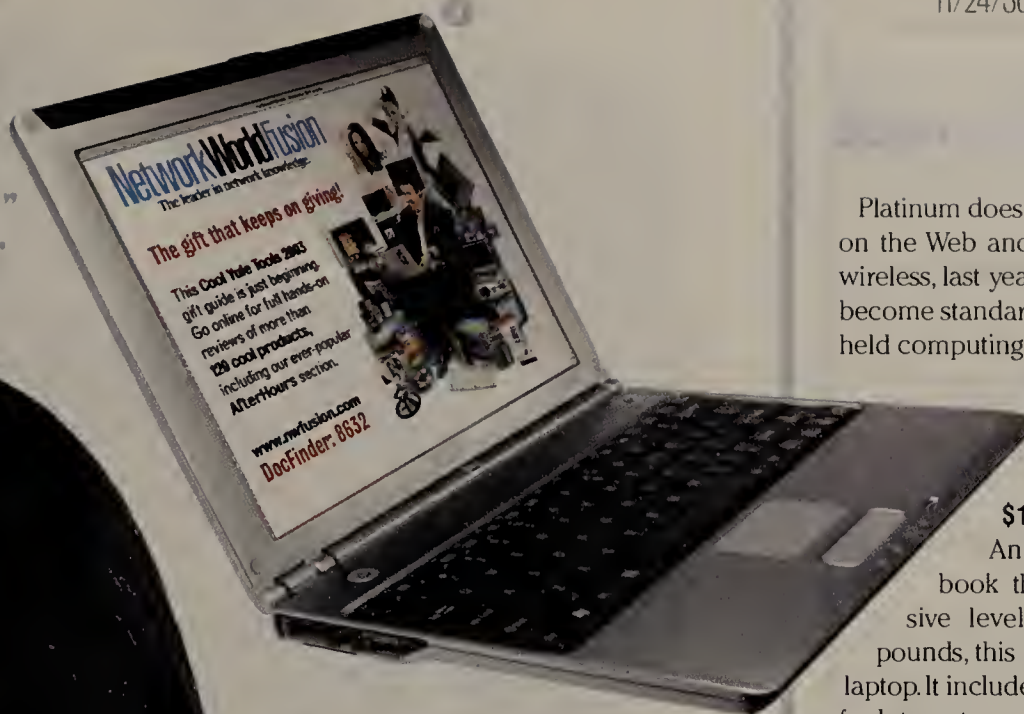






"Silver toys, silver toys. —  
It's holiday time in the test labs..."

— Keith Shaw



**1. Sharp Actius MM10**  
**\$1,500**

An ultra-portable notebook that offers an impressive level of mobility. At 2.1 pounds, this is an extremely small laptop. It includes embedded wireless for Internet connectivity, but sacrifices a bit of performance to gain the mobility (only a 1-GHz Crusoe processor).

**2. Palm Tungsten T3**  
**\$400**

The latest and greatest Palm device, complete with a display that rotates horizontally or extends vertically to offer more screen real estate. The device has a brilliant screen resolution, the latest operating system and integrated Bluetooth for connectivity.

**3. Research in Motion BlackBerry 7230**  
**\$399**

We love how BlackBerry has entered the color screen age. If staying in touch is important to you, then the 7230 is your device. Wireless e-mail, a cell phone and a decent organizer all complement each other in a small package.

**4. Fujitsu Lifebook P5000**  
**\$1,550**

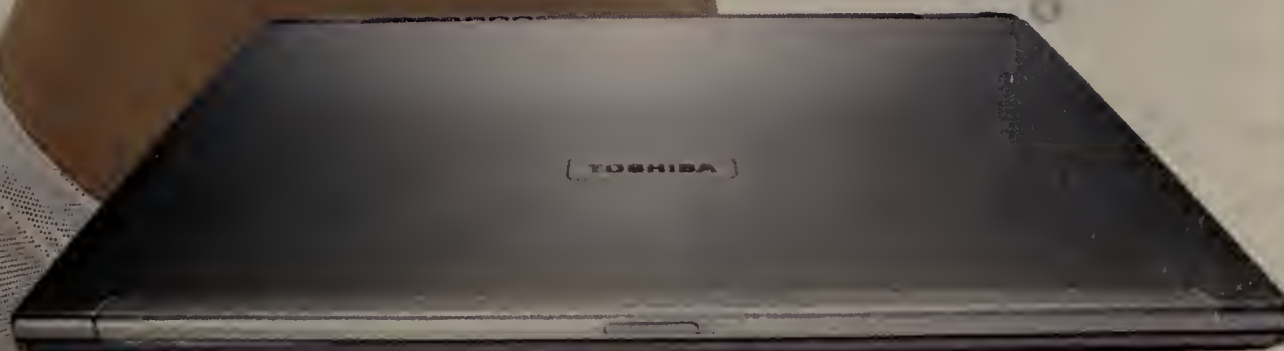
We love small and light laptops this year, and the P5000 rates among the best. It's one of the smallest notebooks that includes a DVD drive, so you still can watch that movie on the plane and not have to lug around a 7-pound beast.

**5. Handspring Treo 600 from Sprint**  
**\$600**

This is a rare device that actually lives up to its hype. The Treo 600 from Sprint provides road warriors with everything they need: organizer, e-mail, cell phone, digital camera and more. All of this comes in a handy package that is only slightly bigger than a regular cell phone.

**6. Toshiba Portege R100 notebook**  
**\$2,300**

We love the keyboard on this extremely tiny notebook. No optical drive, but you can attach one via USB port if you want. The best part is it's very light.





## Silver Ensembles

Good things come in small, silvery packages:

### 1. LG VX6000 from Verizon Wireless \$200

This was the year of the camera phone, and this model was our favorite. But it also has a ton of other bells and whistles, including a really fancy external display.

### 2. Oregon Scientific Digital Camera \$130

Our second-favorite tiny camera is barely more than 3 inches wide, 2 inches tall and a quarter-inch thick. This is a 1.3-megapixel camera that comes with a zoom lens and flash attachment. Not the best camera for serious prints, but you can't beat the size for those moments when you need to take a quick photo to send around via e-mail.

### 3. Kanguru Wizard USB security key \$50

If you want to hide sensitive data on your PC from prying eyes, plug in this USB drive, transfer the files to a "virtual folder" and watch them disappear when you remove the device. One of the simplest ways to hide data we've seen in a while.

### 4. Logitech Pocket Digital 130 camera \$150

Tiny digital cameras came out last year, but they stunk. This year they're getting better. The 1.3-megapixel camera has a cool spy camera feel, and a flash to improve picture-taking. And it's easy to operate and carry around in your pocket.

### 5. Gateway DC-T50 digital camera \$400

We loved the small and sleek 6-ounce digital camera. Five big megapixels will be more than enough for your printable photos. It has great battery life, too.

### 6. Belkin Hi-Speed USB 2.0 7-port hub \$50

The more stuff you get to connect to your PC, the more you're going to need a USB hub. This version lets you connect up to seven devices and is stackable so you can connect even more. It's smiling, silver face will brighten up your desktop and your day.



*On the third page  
of this gift guide,  
my true love gave to me...*



Lost in the holiday shuffle? Find your way to giving gifts like these:

**1. iPaq Navigation System  
\$330**

End all your in-car arguments about whether you're lost. This tiny GPS receiver uses Bluetooth to talk to an iPaq (newer devices) and gives you step-by-step driving directions.

**2. HP iPaq h4150 Pocket PC  
\$450**

Make your colleagues go "oooh and aaah" when they see this small and light Pocket PC. Integrated Bluetooth and 802.11b gives connectivity options galore.

**3. Magellan SporTrak Color  
\$380**

A tiny handheld that tells you exactly where you are and where you want to go on a crisp, color screen. Use as a stand-alone GPS device or connect to a laptop and use with mapping software.

**4. Digital Vinyl CD-R discs**

No matter what their musical tastes, give gifts like these and you'll be No. 1 on their top 40 chart.

**5. E.Digital Odyssey 1000 digital player  
\$350**

We still remember records. If you do too, then take all the digital music you've been gathering and burn it onto one of these. We love the style — nostalgia rocks!

**6. Gateway DMB-200 audio player  
\$130**

The alterna-iPod. More than just an MP3 player, the Odyssey 1000 is a 20G-byte hard drive with a large backlit display, support for MP3, WMA and WAV files; voice recording; and an FM player — all stuffed into a shiny metallic box about the size of a sardine can.

**7. Freecom Beatman Flash MP3 Recorder  
\$180**

Gateway's foray into consumer electronics hits a home run with this model, the perfect device for listening to music while working out. With 128M bytes of music storage and a triple-A battery as its power source, the device is perfect for those on the go.

**8. Freecom Beatman Flash MP3 Recorder  
\$180**

A hip little device that offers MP3 playing and recording abilities. The stereo line-in recording feature lets you convert music into MP3s on the fly. One-touch FM radio recording lets you instantly record any song that the DJ feels like playing.





Record holiday memories big and small, and then share them in style with these great gift ideas:

**1. SmartDisk FlashTrax**  
**\$500**

A must for a digital photographer. Take your images, plug them into the FlashTrax and see them on a 3.5-inch LCD screen. Oh yeah, it has a great MP3 player and video player, too.

**2. SiPix StyleCam DV100**  
**\$130**

A miniature digital camera that can capture still photos, short videos with audio or audio only that you can post on a Web site, send via e-mail or use in presentations. The unit includes software that's fun and easy to use.

**3. Philips FlatTV LCD TV**  
**\$1,000**

At first we thought this 17-inch flat panel was a monitor, then discovered how cool it was as a TV. A widescreen picture for even the smallest spaces.

**4. Hy-Tek Tek Panel 300**  
**\$6,500**

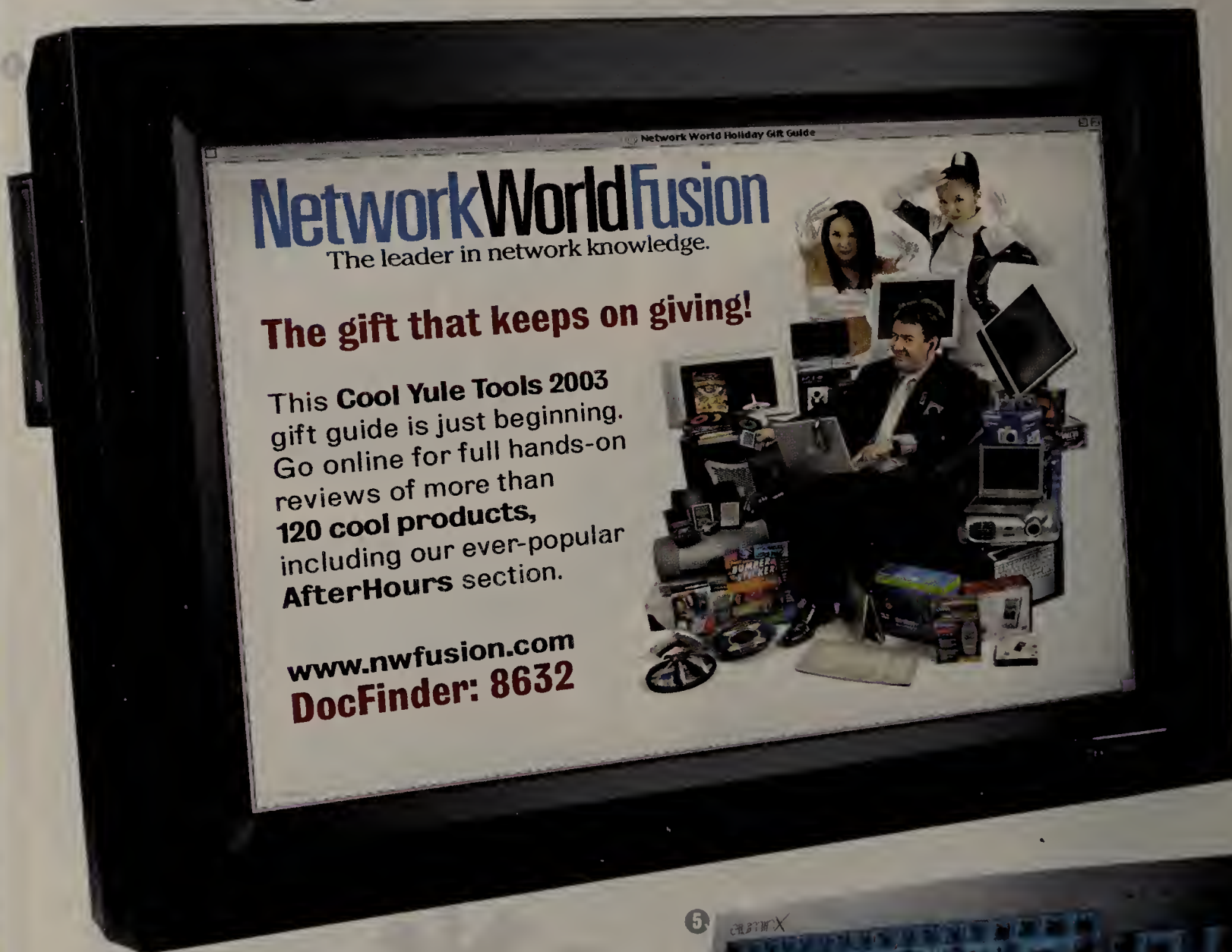
Get the big picture with a 30-inch widescreen LCD monitor, a DVD player and a high-speed computer in one package. We cried when we had to return this. Convergence brought to the logical extreme.

**5. Auravision's EluminX keyboard**  
**\$80**

Perfect for your digital home theater, the 104 illuminated rubber plunger-style keys keep your keyboard seen but not heard in the dark.

**6. Epson PowerLite S1 projector**  
**\$1,000**

When a 30-inch widescreen still isn't big enough, you need one of these. 1,200 lumens of brightness packed into a 7.3-pound package that's easy enough for anyone on your list to use.



*We won't go until we get those,  
we won't go until we get those,  
we won't go until we get those,  
so buy us some now!*



**Credits**

**Project Editor:** Keith Shaw

**Designer:** Brian Gaidry

**Photographer:** Walter Silver

**Santa's Little Testers:** Brett Cough, Greg Cusack, Ryan Francis, Adam Gaffin, Sandra Gittlen, Monica Hamilton, Peter Hebenstreit, Tom Kroon, Jason Meserve, Keith Shaw, Melissa Shaw, Zach Sullivan, Matt Tucker, Alex Weinberg, Elizabeth Weinberg, Neal Weinberg, Brian Wood.

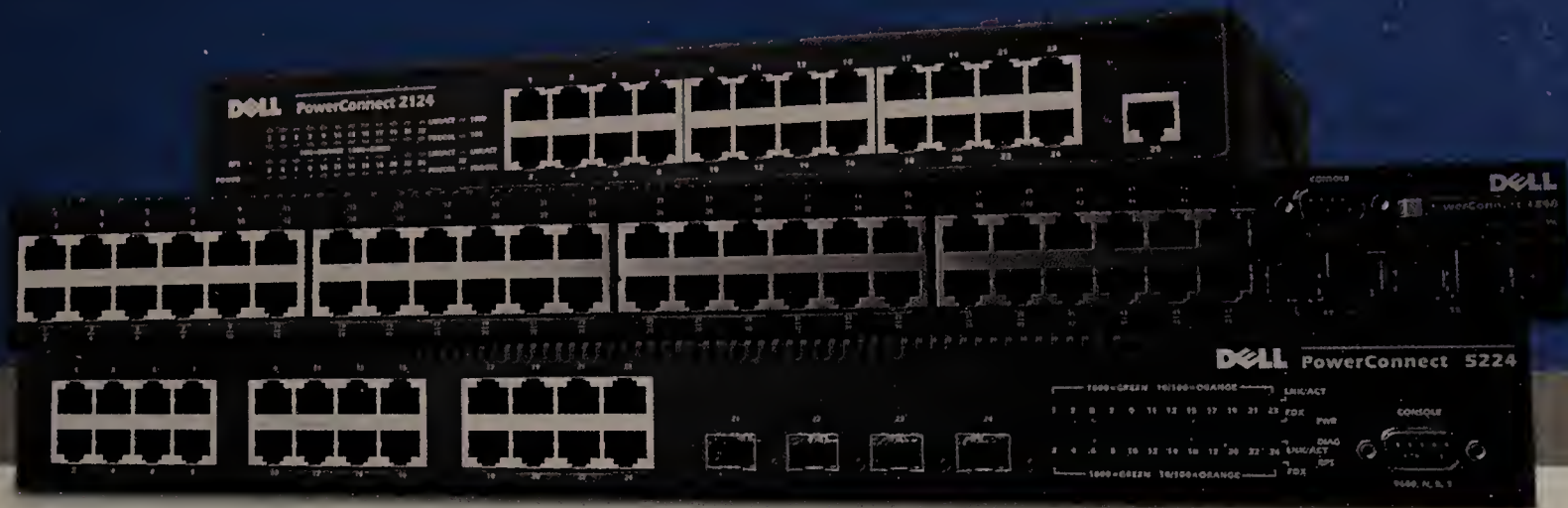
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*Dell PowerConnect 3348 Outperforms the Cisco Catalyst 2950  
by 48% and 3COM SuperStack 3 Switch 4400 by 30%  
in Layer 2 Throughput Tests.<sup>1</sup>*

Tolly Group Report #203116—September 2003



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## Management

# Strategies

- CAREER DEVELOPMENT
- PROJECT MANAGEMENT
- BUSINESS JUSTIFICATION

## Reference information

Technology executives find sharing their product experiences can yield side benefits.

■ BY ANN BEDNARZ

Case workers at the State of Florida's Department of Children and Families have their hands full trying to keep track of the health and safety of all their clients — a task complicated by the dozens of unconnected databases used to store client information.

The IT department wanted to help by integrating all DCF systems and building a consolidated view of client data. But finding the money was a big obstacle.

"State funding is a very complicated process," says Glenn Palmiere, IT director at the Tallahassee agency. "No matter how good a product seems, no matter how good a pilot proves it is going to work, you still have to go through a very large life cycle in order to get the funding."

Fortunately, software maker InterSystems stepped in and fronted the DCF its application integration software for 15 months so the agency could get started before buying any software. "If they didn't do that, we would never be at the point we are now," Palmiere says.

The software loan was a risk for InterSystems, because there was no guarantee of a sale. Following the InterSystems pilot, DCF did its due diligence and shopped out the project to a number of other integration vendors, including IBM and Oracle. In this case the risk paid off. After a pilot project last year to connect five systems, the DCF bought InterSystems' Ensemble software and is working to extend its deployment across 59 systems, Palmiere says.

He is grateful for the loan and now acts as a reference for the InterSystems product. "It's the least I can do by agreeing to tell people about the experiences that we had," he says. "Plus I really believe in it."

Customers such as Palmiere who vouch for a vendor's technology can play a key role in purchases. Gartner recommends that companies in the market for new software conduct extensive reference checking.

"Only through customer references can selection teams gauge the efficacy of business applications operating in the real world," the research firm wrote in a recent software procurement tutorial.

"References should be among the primary mechanisms for substantiation of vendor claims, especially concerning newer or more innovative applications."

Necessarily, vendors depend on existing customers to act as references to their prospects, and many are willing to compensate such references.

Jay Wessel, senior director of technology for the Boston Celtics, has served as a reference for vendors such as Avaya and Ipswitch. In general, if Wessel has a good relationship with a vendor, he's at least open to exploring being a reference.

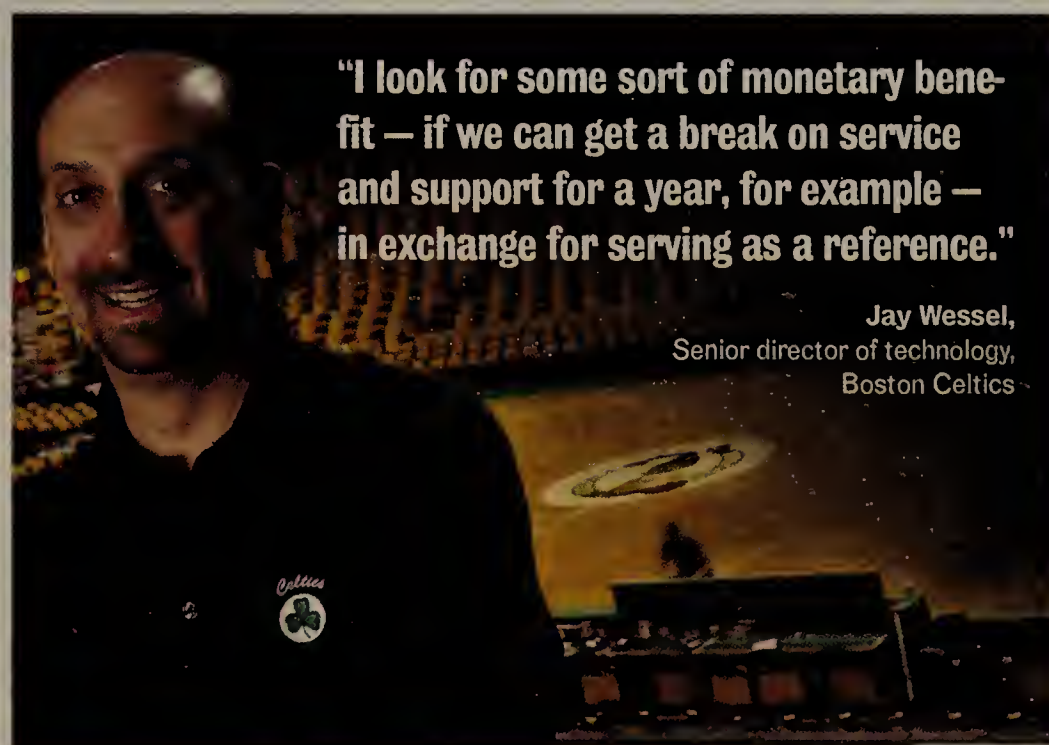
He says acting as a reference can help his organization save money. "I look for some sort of monetary benefit — if we can get a break on service and support for a year, for example — in exchange for serving as a reference," he says. What's more, Wessel says getting his name out there can aid in career development.

However, one drawback is that once Wessel is written up as a reference on a vendor Web site or in a magazine, it can generate unwanted sales calls from other vendors. "I have been a little disillusioned by that," he says.

If you're mulling the idea of becoming a reference, don't expect monetary perks in exchange for an endorsement. Scott

Lundstrom, CTO at AMR Research, says it's unusual for vendors to offer quantifiable financial rewards — such as free service or support — which can have complicated accounting implications. Giving a customer an unlimited-use evaluation copy of a new product or developing a desired feature in exchange for acting as a reference is a more common arrangement, he says.

"There's no malfeasance there, there's no financial transaction" under those conditions, Lundstrom says. "Everyone maintains a certain amount of their moral posture."



**"I look for some sort of monetary benefit — if we can get a break on service and support for a year, for example — in exchange for serving as a reference."**

**Jay Wessel,**  
Senior director of technology,  
Boston Celtics

MATT MCKEE © WWW.MCKEEPHOTOGRAPHY.COM

Some vendors, such as Ipswitch, have a formal process for cultivating and rewarding customer references. Ipswitch launched a program earlier this year to formalize what had been an ad hoc system of tracking referenceable customers, says Tamara Hart, customer and partner programs manager at the company, which makes file-sharing, messaging and anti-virus tools.

Any Ipswitch customer can be a reference, Hart says. But some of the most desirable references are users who have an ongoing relationship with Ipswitch, such as through a service agreement or by participating in its training or user group meetings.

In return for acting as a reference, Ipswitch offers certain perks, such as access to product managers and developers. Reference customers can suggest feature enhancements, and they have access to information about product upgrades and new releases seven days before a public announcement, Hart says.

Usually that's enough of an enticement, but occasionally some extra incentive is warranted. "Sometimes if we really want a particular customer to be a part of the program, then we will offer them something additional, like a free service agreement," Hart says. "We do like to have those big names that are immediately recognizable,

but they can be quite a challenge to get."

Lundstrom agrees. "There are a small number of global, Fortune 100 companies that any vendor would like to have as a reference. Those companies understand the power they have in the marketplace, and they don't give those things out lightly," he says.

For some customer references, it's not about perks at all. Paul Galliher, vice president of distribution at footwear manufacturer Skechers in Manhattan Beach, Calif., says the reason he talks about his experience with a vendor is to help his peers. "I know I appreciate it if someone shares their experiences — whether it was a good experience or a bad experience, information that would help me make a better decision," Galliher says.

He most recently has talked about his company's implementation of wireless LAN products from Psion Teklogix and warehouse management software from Manhattan Associates (see story, [www.nwfusion.com](http://www.nwfusion.com), DocFinder: 8627). The vendors didn't ask him to be a reference directly; the request was filtered through Skechers' internal public relations department, he says.

Skechers had sought information about the products from other users before investing, and now Galliher is returning the favor. ■



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Get tips on acting as a vendor reference.

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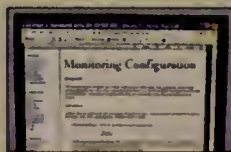
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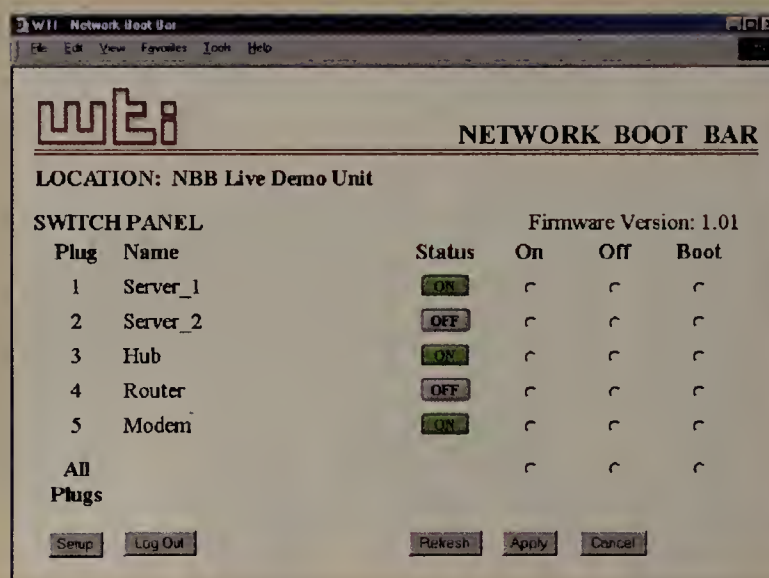
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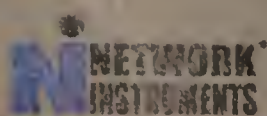
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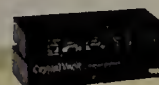
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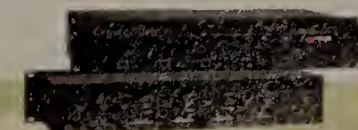
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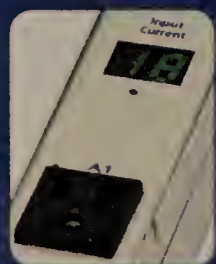
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**Senior Systems Architect:** Design and develop client/server and stand-alone applications for health care data and management databases. Responsibilities include case analysis, project design and implementations, DTS transformation and data scrubbing. Also, responsibilities include design and development of customized GUIs and databases including implementation of QA/QC procedures before delivery of products. Must demonstrate knowledge of Windows NT & 2000, ASP, CFM, JSP, SOL, C++, VB, along with server setup and configuration, network management and implementation security measures. Must have strength on study business systems, preparing business requirement documentation, design databases architecture, design user interfaces using state of the art technology with SQL and Java architecture. Requires: Masters in Computer Science/Information Systems with one year experience in Systems Engineering. Must have good communication and presentation skills. Send two resumes/responses to: Case Number 200201475, Labor Exchange Office, 19 Staniford Street, 1st Floor, Boston, MA 02114

**Senior Programmer (Huntsville, AL)** must utilize C++, WIN32 API's and RPC's to develop, modify, debug, and analyze computer programs and software systems running on Microsoft Windows 2000 and XP operating systems in a network environment. Programs are written in C/C++/JAVA using Microsoft Visual Studio with WIN32 API's. Program source is maintained by a software source control system. Applications to be maintained and enhanced have complex GUIs and SQL/ODBC database access capabilities. Candidate will interface with customers to analyze, diagnose, and correct problems in company supplied software systems. Candidate will follow up corrections with operational testing to insure correct performance. **REQUIREMENTS:** Masters degree in Computer Science with working knowledge of C/C++, WIN32 API's, and network programming (including Remote Procedure Calls) as demonstrated by documented graduate coursework, graduate research, or on-the-job training. Competitive salary and benefits, 8-5 M-F. Send resume to: United Controls Corporation P.O. Box 4620 Huntsville, AL 35815-4620 (No phone calls or walk-ins)

**Project Engineer (NYC):** Direct, coordinate, & exercise functional authority for planning, organization, control, integration & completion of engg project w/in area of assigned responsibility. Review product dsgn for compliance w/engg principles, customer contract reqmts. Calculate cost & determine feasibility of project based on analysis of collected data, applying knowl & techniques of engg & advance math. Direct preparation & modification of reports, specs, plans, construction schedules dsgns for project. Utilize following to prep engg & dsgn documents: Windows, AutoCADD, DbaseII Plus, Lotus, HTML, DHTML, XML, Java, JSP, Primavera Suretalk & Oracle. Reqs Bach in Engg + 3 yrs exp in job offd or related field. Respond to Systec, Att: Salil Patel, 350 5th Ave, NY, NY 10118, e-mail systec@system-cusa.com, Fax (212) 290-2889.

**Software Engineer III - Systems Analysis & Programming (Waltham, MA)** Lead a team to provide conceptual and technical solutions to complex business and technical problems. Provide innovative technical and architecture solutions to business requirements by applying expertise in the business disciplines of data base management, operating systems, business modeling, system performance, data resource management, software engineering, and telecommunications. Design and develop business process automation systems for the telecommunications industry utilizing Java, Perl, MS SQL Server, and C/C++. One year of experience in the job offered or one year of experience in the related occupation of Engineer or Analyst required. One year of experience must include experience with Java, Perl, MS SQL Server, and C/C++. Master's Degree in Electrical Engineering or Computer Science is required. \$90,465/year, plus usual corporate benefits, 9 AM - 5 PM, 40 hrs/wk. Mail two copies of resume to Case #200203285, Labor Exchange Office, 19 Staniford Street, 1st Floor, Boston, MA 02114. Must have proof of legal authorization to work in the United States.

**Data Systems Analyst II (mult. opngs)** - Analyze, design, test & evaluate network sys. such as: sys. performance monitoring, sys. sizing, file sys. mgmt, modeling, cluster mgmt, network config & backup mgmt. Test & evaluate hardware/software. Analyze test data & recommend hardware/software for purchase/install. Resp. for Oracle install & config, operating sys & hardware troubleshooting. Must have MS deg.: Comp. Science/ Apps, Engineering, Math, Physics, other science field + 2 yr exp. in: HP Unix, Sun Solaris, HP Service Guard Cluster, HP 9000 Hardware Trouble Shooting (V, RP, N, L, K Class), Storage Networks (EMC Symetrix, HP XP, Hitachi), Networked Attached Servers (Netapp F760), Enterprise Backup Solutions (Netbackup, Omniback, QuickRestore), Oracle, Cisco Switches & Routers, Performance Mgmt (HP Openview ITO, Patrol, Concord), EDA Applications (Cadence, Avanti), Load Balancing Software (LSF) & SAP. Frequent Travel & Relocation. Will accept BS + 5 yrs progressive exp. in lieu of MS, M-F, FT 8-5, 50-70k. Send: HR, MSU Software Consult, 600 1st Ave, NW, Cedar Rapids, IA 52405 REF:01

**Sr. Programmer/Analyst** to design, develop, implement & maintain computer systems including database architecture, databases, e-commerce applications & web pages, intranet, internet & network infrastructure; creation of project plans, schedules, & estimates; preparation of system documentation & transformation processes to support CPH Mall and other systems utilizing XML, XSL, JavaScript, data modeling, TBC publishing system & CPH Mall database, Microsoft Commerce Server 2000 and DBMS (RMS, SQL Server and Oracle). Requires BS in Computer Science, Engineering, MIS, SSM or related field plus 2 yrs experience as Programmer/Analyst. Send resumes to D. Fiedler, Human Resources, Lutheran Church-Missouri Synod, 1333 S. Kirkwood Rd., St. Louis, MO 63122.

**TRANSITION DEPLOYMENT MANAGER - WESTFORD, MA.** Analyze current logistics processes to develop Global Supply Chain strategy and implement innovative technology solutions and manage multiple deployment projects globally. Apply advanced analytical tools and methods to develop processes for optimal service levels and cost reduction, in accordance with local and international government standards and security considerations. Evaluate and select IT system solutions to ensure integrity with existing platforms to facilitate user interface and integrity across multiple organizations globally. Develop applications using database management tools, MS Office, Excel Macros and MS project. Apply advanced risk and decision analysis tools, and interpret and map physical and financial data flow for logistics operations. Select vendors across multiple organizations, disciplines, regions and countries. Negotiate global outsourcing contracts and establish service level agreements across regions. Develop business case, including detailed due diligence, financial projections and implement SLA's for business initiative. Requires a Master's degree or MBA in Civil or Indust. Eng., Supply Chain/Operations & Logistics, or related field, and 2 years of exp in job offered or 2 years of exp as Project Mgr/Engineer, Deployment Eng, Director, or related. The 2 years of exp must involve management of multiple outsourced projects for development & deployment of technology solutions to improve global supply chain processes through application of advanced financial, risk and decision analytical tools and database management techniques. 40 hrs/wk, 8:00 am - 5:00 pm, Salary: \$76,500 /year. Please send two (2) resumes to: Case# 200203211, Labor Exchange Office, 19 Staniford Street, 1st floor, Boston, MA 02114

#### SOFTWARE ENGR

Analyze, dsgn, dvlp & customize process control hardware & software for mfg/ pharmaceutical cos. Specific duties include: (i) meeting w/clients to determine project specs & particular prog. languages to be used; (ii) programming process control hardware that monitors & tracks specific variable established by customer; (iii) dvlpng and/or customizing software (such as Intellution or Wonderware) to access & organize data stored in controllers; (iv) dsgng/dvlpng software applns utilizing VB, ASP & Oracle.; (v) performing sys. analysis, coding & testing of applns; (vi) dsgng & maintaining Oracle & SQL server databases; (vii) dsgng & maintaining data warehouse sys. using Informatica; (viii) writing applns using Windows CE & Palm-OS; & (ix) performing sys. automation & optimization. Bach. degree in Comp. Sci. or Electronics Engmg + 3 yrs exp. in position offered or as a Software Consultant or Prog. Analyst reqd. Must have: (1) 2 yrs of exp. w/VB, ASP, Oracle, SOL Server, Visual Source Safe, ADO, XML, IIS, WIN CE, Palm-OS, Informatica, C, C++ and Active X technologies; (2) exp. programming process control hardware that monitors & tracks specific variable set by client as well as customizing Intellution or Wonderware software to access data stored in controllers/PLC (Programmable Logic Controller); & (3) high mobility preferred. 40 hrs/wk, 8 am - 5 pm, \$64,240/yr. Qualified applicants please submit resume to McKeesport CareerLink, Attention: ES Manager, 345 Fifth Avenue, McKeesport, PA 15132-2600. Please refer to Job Order No. WEB 373713.



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- Web Commerce
- SAP/R3, ABAP/4 or FICO or MM & SD
- Oracle Applications & Tools
- Lotus Notes Developer
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- UNIX, C, C++, Visual C++, CORBA, OOD or OOPS
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**Systems Analyst.** Analyzes user requirements, procedures, and problems to automate processing or to improve existing computer systems. Must be able to travel. Bachelor's degree in computer science, engineering, or math-related and 2 yrs. experience required in job offered. Included in, and not in addition to, the 2 yrs. requirement, 2 years experience in Oracle, PL/SQL, Informatica, Data Warehousing, J2EE, Servlets, JAVA, JSP, XML, JAVA Script, Unix Shell Scripts, Netscape Application Server, IIS/ ASP, ERwin, Business, Object, GEMMS MRP, Six Sigma. 40 hrs per week, Mon-Fri, 9:00 a.m. - 5:00 p.m., no overtime.

Apply by resume only to Human Resources Department, Capricorn Systems, Inc. 3569 Haversham at Northlake, Building K, Tucker, GA 30084.

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**ShareBuilder Corp.** (former Netstock) has position for DBA responsible for online financial brokerage service using Powerbuilder, SQL server. Minimum requirement is bachelor with experience in SQL. Competitive wage with benefits. Contact [stevet@sharebuilder.com](mailto:stevet@sharebuilder.com). EOE.

**Business Consultant** (Atlanta, GA) to ensure successful client implementation of proprietary retail management systems by providing retail industry, and company-specific product knowledge during implementation cycle. Consult with clients and partners, providing in-depth application and integration knowledge; identify and respond to client's technical needs and service opportunities. Lead presentations and demonstrations of applications and facilitate business process discussions to assess client's specific business needs and relationship to application functionality. Act as liaison between client and product development. Requires knowledge of retail management applications and process, e-commerce, and retail planning systems implementation and integration. Minimum travel requirement - 80%. Requirements: Bachelor's degree in Computer Science, Information Technology or a related field, or the equivalent combination of education and experience plus 2 yrs experience in IT consulting. Competitive salary offered. Apply on line at [www.retek.com/apply](http://www.retek.com/apply). Be sure to include ComputerWorld as the source code.

**Programmer Analysts** required by Software Dev. & Consult Co. Duties: Analysis, design, development Enhancement, and maintenance JD Edwards ERP Sales application software, or Inventory and AR module using RPG/400, CL/400, SQL/400, or RPG-ILE on AS/400 and design of database using DB2/400. Create reports using JDE Dreamwriter. Implement user requirement or Conduct Business analysis for clients on Sales & Distribution modules using MS-Projects & Visio. Job to be performed in Chicago, IL and various unanticipated client sites in the U.S. as assigned. Req: Bachelor's Degree in either Math, or Sci, or Comp. Sci. or Engg. (any displ), (Will accept an equivalency based on education and/or exp). 40 hrs/wk, 9:00AM-5:00PM, M-F. Apply to CEO, Edgesys, Inc., 555 West Madison Street, Ste 1-2311, Chicago, IL 60661.

**Technical Support Specialist:** Maintain computer system files & servers; trouble shoot & expand internal network/work stations; interact with customers to obtain computer graphical files; coordinate e-meetings; install, maintain & implement networking/servers; provide training. Req.: 2 yrs in job offered or 2 yrs in related occupation. Send resume to Stand-Out Services, #726, 3162 Johnson Ferry Rd. Ste 260, Marietta, GA 30062. Ref MS

**Computer Programmer.** Program w/CL & RPG ILE, esp. for Med. Billing, Wholesale Distrib. & Mfg. Syst. Tech. consultation for custom IT sol'ns; integration & conversion - HIPAA (ASC X12N), EDI, Barcode, & other stds. Trouble-shoot, test, debug; install & perform programming. Update & maintain prog. for Advanced Function Printing capabilities of AS400. Resolve syst. & bus. issues & modify software as required. Create & provide doc. B.S. or equiv. + 2 yrs., knowl. of HIPAA & IT-related impact. Send resume to President, SoftLEAD Technology Partners, 100 S. Citrus Ave., Ste 201, Covina, CA 91723.

Multiple openings for software engineer/consultants, programmer analysts, dba, project engineer/manager, program mgr (Biz Dev). Some positions req Bachelor (or equiv.) while others req Masters(or equiv.) in CS, Engg, Math, Bus Admin or related field. We will accept the foreign edu. equiv. &/or its equiv. in edu. & exp. Exp. req. will depend on position. Mail resumes to HR, Harvard Soft, 605 Cardinal Lane, Tyngsboro, MA 01879.

**Software Engineer** (with Bachelors and 5 years experience) - Williamsport, PA. Job entails and requires experience in design and development of applications using Oracle, SQL Server, EJB, JSP, XML, SAP BW, ABAP/4, and Mercury Test Director. Relocation within USA possible. Attractive compensation package. Send resume to Supriya Palayekar, Palayekar Companies, Inc., 1959 East Third Street, Williamsport, PA 17701.

**Sr. Software Engineer** - Design/develop/qualify/test/support large scale client-server prod. in Windows NT/2000, translate designs to software prod. using Windows NT/2000, Borland Delphi/Report Builder/MS SQL/Paradox/Word/Excel/Access/XML/COM/DCOM, interface w/ high & low speed doc. process. devices. Bachelor's degree Computer Sc., Engineering or related field + 2 yrs exp. in position, as Software Developer, or as Software Eng. req'd Must be proficient in Windows NT/2000/Delphi/Report Builder/MS SQL/COM/DCOM/high & low speed doc. processors. Competitive salary, 40 hrs/wk, OT as need. Send resume to: D. Root, HR Director, Alogent, 4005 Windward Plaza, Alpharetta, GA 30005 Ref: KS.

**Asst Computer Support Specialist.** Asst. Comp. Supp. Specialist. in adm. comp. sys. using & incl. maintenance of computers. Req:Bachelors in Comp. Sci. or related field. 40 hr-wk. Job/Interview Site:Los Angeles, CA. Send resume to BaBa Designs, Inc., 2600 E. 8th St, Los Angeles, CA 90023

**Programmer-Analyst (F/T).** New Rochelle, NY. Analyze user requirements, design, and develop network management software using C++, Java, Sybase, Unix, win2000. BS in CE/CS with 1 year experience. Resume to HR., Heavy Water Ltd., 270 North Ave, Suite 709, New Rochelle, NY 10801

**Java Application Developer** wanted by Gbl Mktg Communications Co in Manh. Perf serve side programming using Java Servlets, Java Applet, Java Database & Javascript; des, dvlp & test web appls; des & implement mid-tier architecture; create e-commerce appls. MS in Comp Sci & 1 yr exp in job offered req. Respond to: QJ/HR Dept, PO Bx 4241, GCS, NY 10163.

**Programmers, Software Engineers & Senior Oracle Apps.** DBAs (Cary, NC):Design, develop, test apps in (1) J2EE, Versata Logic Suite, workflow engine in DB2 & Websphere on Unix from SAP and other legacy apps. migration; (2) Oracle Apps. DBA 11i & rel. tools, RMAN, SQL Server Admin., Clarify, Oracle Financial Apps., Shell Scripts, Silverstream, Weblogic, Apache in various OS. Travel to Client Sites reqd. Prevailing wage. Mail resume to: HR, 2415 San Ramon Valley Blvd., Suite 4140, San Ramon, CA 94583. EOE.

**Software Engineers** to analyze, design develop apps using VC++, C++, VB, Java, JavaScript, XML, HTML, COM/DCOM, ASP, Oracle, IIS, DLL, TCP/IP under Windows/UNIX OS; perform system/functional req analysis; document detailed project spec and review conceptual model with users; provide training/support for related appl software; perform debugging/modifications of existing software. Require: MS or foreign equiv. in CS/Engg. (any branch). High Salary. F/T. Travel involved. Respond to:HR, Mindspan Systems, Inc., 6050 Peachtree Parkway, Suite 240-214, Norcross, GA 30092.

**Developer of advanced user-interface technologies** seeks Lead Technology Engineer for Brisbane, CA office to direct & coordinate the research, design & dev't of cutting-edge voice & audio processing products. MS in EE or ME with underlying BS in Product Design Engng or related 2 yrs exp in Product Design 1 yr exp in: Speech Processing Technologies, Technical Project Mgmt, Int'l Product Dev't & Mechano-acoustic Properties of Materials & Electronics/SW Design Resume to AliphCom, attn HR, 8000 Marina Blvd, Ste. 120, Brisbane, CA 94005.

**Programmer** (Philadelphia, PA): Develop, design, analyze & test Software applications using C/C++, XML, Rational Suite Enterprise, Pro\*C/C++, Oracle, PL/SQL, DB2/UDB, Object-Store, MQSeries, TIBCO Rendezvous, Tuxedo, Clear Case and HPUX. Req. Bachelor's or its foreign degree equivalent in C.S. or other related engineering field + 2yr exp. in job offered. Resume to Pres., Softech Int'l Resources, Inc., 5031 Riverthur Court, Duluth, GA 30096

**Software Engineers** to analyze, design develop apps using OO Methodologies, VC++, C++, Java, HTML/DHTML, XML, XSL, SQL, Perl, Oracle under Windows/UNIX OS; perform project scoping, planning time/cost schedules, quality of deliverables; perform tune up to improve system performance; study, evaluate new tech/methodologies; provide technical guidance for complex user problems. Require: MS or foreign equiv. in CS/Engg. (any branch) & 1 yr exp. in IT. High Salary. F/T. Travel involved. Resumes: HR, Unilinx, Inc., 4625 Alexander Dr., Ste 110, Alpharetta, GA 30022.

**Software Programmer** needed in Houston to design, develop inventory/order management software and web based order processing using JAVA, SOAP, WSDL; integrate accounting software with inventory/order management programs for intern. export company. Must have Bach. in Comp. Sc. and 2 yrs. exp. in job offered or 2 yrs. exp. using SOAP, WSDL and JAVA 2 platform to design, develop, integrate, test enterprise systems. Email resumes to [hr@rags2000.net](mailto:hr@rags2000.net), Lone Star Fashions, Inc. Put code SP on the resume.

**Software Engineer. B.S. Deg. in Computer Science +2yrs. exp. in job offered 2 yrs exp. as Programmer Analyst. Send Resume to Attn. R. Severo Purple Cactus Technologies, 11583 E. Cavedale Dr, Scottsdale, AZ 85262**

**Senior Programmer Analyst.** Convert customer requirements into program specifications. Analyze impact of proposed solutions on business applications. Ensure satisfactory functioning through testing, analysis of results, and correction of deficiencies according to customer requirements. Serve as team lead for the Enterprise server development team. Review work of development team members. Must have Bachelor's degree in Computer Science, Engineering or related field, one year experience, and must be able to use Visual Basic, C, C++, SQL, HTML, Object Oriented Design, and Oracle databases. Send resume w/ cover letter to APAC Customer Services, Inc., Attn: Cindy Corkery, 6 Parkway North Center, Deerfield, IL 60015. EOE/AA

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**Software Engineers** to analyze, design, manage data warehouse apps using VB, SQL Server, Java, XML, SourceSafe, ADO, Access under Windows/Unix os; study/evaluate new technologies/methodologies; perform requirement analysis to determine technical feasibility; perform database management, s/w testing, support & security maintenance. Require: MS in CS/Engg. (any branch) & 6 months exp. in IT. Travel involved. High Salary. Resume to: HR, Smartsoft International, Inc., 4898 South Old Peachtree Rd, Ste 200, Norcross, GA 30071.

**Programmer Analyst** (Skokie, IL) to analyze, dsgn, dvlp, implmt, test doc, & maintain s/ware applics & systm utilizing Oracle 8i, SQL, Win, Forms, Reports & Unix. Req Bach in Math, Comp. Sc, or Engg or its equiv + 2 yrs exp in job or related area. Resp to Trade Wind Associates, Inc., Attn: Shahrookh Bodhanwala, 14 E, 38 St, NY, NY 10016. Fax (212) 685 5667, e-mail: [shahrookh@twai.com](mailto:shahrookh@twai.com)

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Programmer/Analyst/Software Art Corp., a software consulting firm, requires software professionals with demonstrated hands-on experience in the following: Unix System Admins Sun/HP Client Server: MS VB.NET, ASP.NET, C#C++/Oracle/Sybase/Windows/Unix DBA: Sybase/SQL Server Internet Computing: JAVA/CORBA/XML, JAVA/CORBA/XML, JAVA Websphere/Weblogic QA Testers: Manual/Automated Business Analyst, National Account Managers, SAS Programmers. Send resume to: Software Art Corporation nicky@softwareart.com

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Global Software Solutions, Inc., an established IT company, is searching for Software Professionals/System Administrators with experience in planning, design and implementing RS/6000 SP, AIX and HACMP, including Websphere, DB2 in SAN. Position is subject to relocation to job sites throughout the United States. Qualified applicants mail resumes to: HR Department, Global Software Solutions, Inc., 9290 Corporate Circle, Manassas, VA 20110.

**PROGRAMMER ANALYSTS** for Naperville, IL office. Develop software applications using C, C++, VB, Delphi, ASP, XML, Coolgen, Interwoven; Develop client/server applications in Oracle, PL/SQL, Developer 2000 & Designer 2000. Bachelors req'd in Computers, Engineering, Math or related field of study +1 yr of related exp. 40 hrs/wk. Must have legal authority to work permanently in the U.S. Contact HR Manager, Anthropology International, Inc. 3655 Hector Lane, Naperville, IL 60564

**Design Engineers**  
(ASIC/FPGA):  
Design, develop, code, test and implement Hardware Systems & Computer Chips in Verilog, VHDL, Specman utilizing ASIC/FPGA design tools, Perl, Unix, C, Assembler & rel. tech. Prevailing wage & benefits. Send resume to HR, 5555 Oakbrook Parkway, Ste. 280, Norcross, GA 30093. EOE.

Senior Software Engineer wanted to develop large-vocabulary, continuous speech recognition engines & software; analyze & enhance improved or new speech recognition algorithms; create & implement new speech recognition algorithms; incorp. new tech. into the existing code base; architect & design speech recognition engines in accordance with agreed API's & performance reqts.; design software to implement speech recognition software using C++ and Python in Windows & Unix environments; ensure product quality by verifying implementation success & optimizing various types of engine software. Must have Master's Deg. in Comp. Sci., Elect. Eng. or related field, & 2 yrs. speech recognition software development exper. A Bach. deg. in the above fields & 4 yrs. speech recognition software development exper. can be substituted for above reqts. 40/hr/wk. Salary \$85,561/yr. Send 2 resumes to Case#200203232, Labor Exchange Office, 19 Staniford St., st Fl., Boston, MA 02114.

#### SYSTEMS ENGINEER

Witness Systems, Inc., a Developer of Client/Server Monitoring Software, seeks a qualified Systems Engineer for Bloomington, IL location. Must have a Bachelor's degree or foreign degree equivalent in Electrical Engineering, Computer Engineering, or related field plus 2 years of experience in the position offered or 2 years of experience in operating systems administration, database administration, and programming. Salary and benefits commensurate with experience. Send resume to: Sheri Mattison, Employment Manager, Witness Systems, Inc. 300 Colonial Center Parkway, Roswell, GA 30076.

Computer Engineer-Pleasant Grove, UT. Dvlpmnt of info sys & supportive inter-company wireless & hi speed internet (SCADA apps) comun. b/w US & parent co operations in India. Periodic & prolonged assignment in India & freq. trvl b/w co locations in US. B.S. comp eng, electrnics or telecoms. Proven ability to perform following: stfwr & prgrmng supt of ofc network environs; wireless & hi speed internet comun using SCADA apps; website dvlpmnt (Java, C, C++, VBscript; Dbase integr. Using Oracle & Access & manipul b/w multiple cost sys, acctng stfwr & varied dbase structures. Send resume to Westcon Microtunneling ATTN: Harold Ruf, 800 S. Main, Pleasant Grove, UT 84062.

Computer Engineer-Auburn Twshp Co. seeks Comp Engineer for helping in the design of software/equipment to assist/aid in engineering dept; test engineered thermoset materials/mech properties, viscosity measurement, flow analysis, cure analysis, specific gravity, electrical analysis, colorimeter and spectrophotometer under supervision of Engineering Specialist; operate equip such as Tinius Olsen testing machine, Izod impact tester, computerized interfaced measuring equip for electrical/mechanical properties and analytical equip for color, viscosity and cure. Min req 6 months in-job exp, including exp in UNIX, C++, and VBASIC. Resumes (no calls) to Mar-Bal, Inc., 16930 Munn Rd., Chagrin Falls, OH 44023. EOE.

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**Reference:** Persons interested in this position may send correspondence to:

Denise Baker  
Winegard Company  
3000 Kirkwood Street  
Burlington, IA 52601

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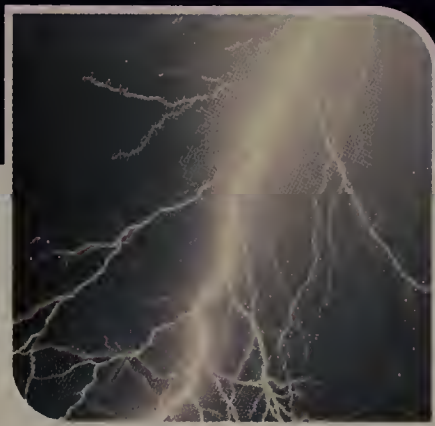
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## BackSpin Mark Gibbs



# High-speed communications and a slow joke

**F**or the last couple of weeks we have talked about vision with regard to IT vendors and end-user organizations. This week, I want to talk about the visions of telecom companies and government in relation to the Internet.

There can be no doubt in the mind of anyone who has a clue about our culture that the Internet is maturing into an essential service for business and private communications. Moreover, we are finding there really is no such thing as too much bandwidth, even for consumers.

Taking this as a given, it would seem to be blindingly obvious that the faster we roll out high-speed access to everyone, businesses and consumers alike, the better.

Now I am lucky enough to live near Los Angeles, where DSL service from SBC is generally easy to get. I have DSL service at 384K bit/sec bursting to 1.5M bit/sec downstream and 128K bit/sec upstream with five static IP addresses for \$65 per month.

<digression>DSL might be easy to get but dealing with SBC customer service is a joke. For example, it would have been nice if SBC had told me a new reduced price was available for my DSL service. When we moved in 2000 I signed up for Enhanced

DSL at \$80 per month so I could get the higher speed. But when I started writing this column I thought I'd check the DSL options. I found to my surprise that there were nine new consumer DSL services available, and my Enhanced DSL, now called Standard Plus-S, is \$15 less than I was paying.

The first customer service representative I talked with told me I should have seen the ads on TV. "But I don't watch TV," I said.

"The new services are listed on the Web site," she replied.

I resisted the temptation to point out I am not in the habit of scanning the Web sites of my service providers on the off-chance they might be offering better pricing and asked her to change my account. Of course, that had to be done by a different department. In all, it only took an hour. Need I say anything? <digression>

The problem is that while DSL and cable service provision has gotten much better in the last few years, the fact is high-speed access is difficult to obtain when you aren't near a major metropolitan area and, as fast as DSL and cable are, they aren't fast enough.

For companies serving the business-to-business and business-to-consumer markets the next big step will require serious bandwidth that will allow, for example, full-length, high-resolution

motion pictures to be transferred in minutes rather than hours.

Interestingly, Utah is planning to build the largest ultra high-speed public network in the U.S., serving Salt Lake City and 17 other cities. It will provide a basic data rate of about 100M bit/sec to 723,000 residents in 248,000 households and 34,500 businesses, and cost only \$25 per month!

This project, called the Utah Telecommunication Open Infrastructure Agency, or UTOPIA (nice one), is scheduled to start in early 2004 and will cost about \$470 million. They expect it to break even within seven years!

These cities are taking the initiative because the telcos and cable companies won't. And predictably the telcos in those areas already have started to complain about unfair competition and how the bandwidth will be far greater than anyone needs.

Here's a fabulous example of differing visions: The municipalities see the need and opportunity for really high-speed communications while the telecom companies are blinkered and shortsighted.

We should all be rooting for the UTOPIA project because it will jump-start the national communications infrastructure we need. Of course, customer service still will be a joke.

*Whimsical thoughts to backspin@gibbs.com.*



## 'NetBuzz News, insights, opinions and oddities

**By Paul McNamara**

### New thinking about old advice

Conventional wisdom comes to be known as such for good reason:

Enough generally smart people reach a rough consensus on a particular subject to give that consensus at least the appearance of common sense.

It's why we don't eat undercooked pork and tell our kids not to take candy from pop singers.

Conventional wisdom isn't always wise, of course, and quite often it changes.

The latter might now be the case with what most of us have learned as e-mail users — and imparted to others — regarding the wisdom of exercising the opt-out option in spam. In short, the best advice has been "don't do it." Not only is it a waste of time, this reasoning has held, it's also likely to be counter-productive. You might have read such words here two weeks ago.

But is the advice wise, or merely conventional?

"You repeat the often-heard mantra 'that responding to opt-out requests is a fool's errand that only confirms to spammers that they have reached an active e-mail address,'" writes Joel Trammell, CEO of network management vendor NetQoS. "This statement has never made any sense to me. Why would a spammer take the time to look at who tries to opt out and send more e-mail to them? I understand that most of the time the opt-out links don't work — because spammers don't want to take you off their list — but I can't think of any reason a spammer would capture the e-mail address of people who opt out just to send them more spam.

"I believe this is one of those 'facts' that has been repeated so many times [that] people believe it must be true, but I don't think there is any evidence to support the idea."

Depends on what you think of the conventional wisdom . . . and where it stands today.

The knowledge that an e-mail address is active — more precisely that thousands of e-mail addresses on an assembled list are active — has indeed been a commodity that shady brokers of e-mail lists have sold successfully to spammers, says Paul Hoffman, director of the Internet Mail Consortium and a genuine go-to guy on all matters related to spam. (Although, as Hoffman notes, it's a mystery why spammers would believe anything that their suppliers tell them about the quality of those addresses, given that the suppliers, too, are often spammers.)

More to the point, the market for such "clean" lists apparently isn't what it used to be.

"Spammers don't care whether you're there or not anymore," Hoffman says. "They just want to get you to a Web site."

Which means they're no longer hungry for active address lists. And that lowers the risk of you landing on one by replying to an opt-out option.

"The dumb spammers are still doing that," Hoffman adds, but their numbers are such that choosing to opt out ought not increase one's overall level of spam ... at least not much.

"I don't believe anymore that opting out hurts," he says.

Nor does he believe it will bring a user much relief, but that's a different topic.

As for Trammell, he's already acting on his convictions.

"I have adopted a strategy of opting out [when possible] and it certainly doesn't seem to have made things worse and it does reduce the 'more legitimate' spam," he says. "Making a judgment call to opt out when it appears to be a 'real' business and just deleting the message when it appears designed to drive Web traffic might be the best we can do."

Personally, I don't have the patience. And I can see the difficulty in trying to convey such a nuanced approach to thousands of corporate users.

But I also could see this having the makings of a new conventional wisdom.

*Have an unconventional thought? The address is buzz@nww.com.*



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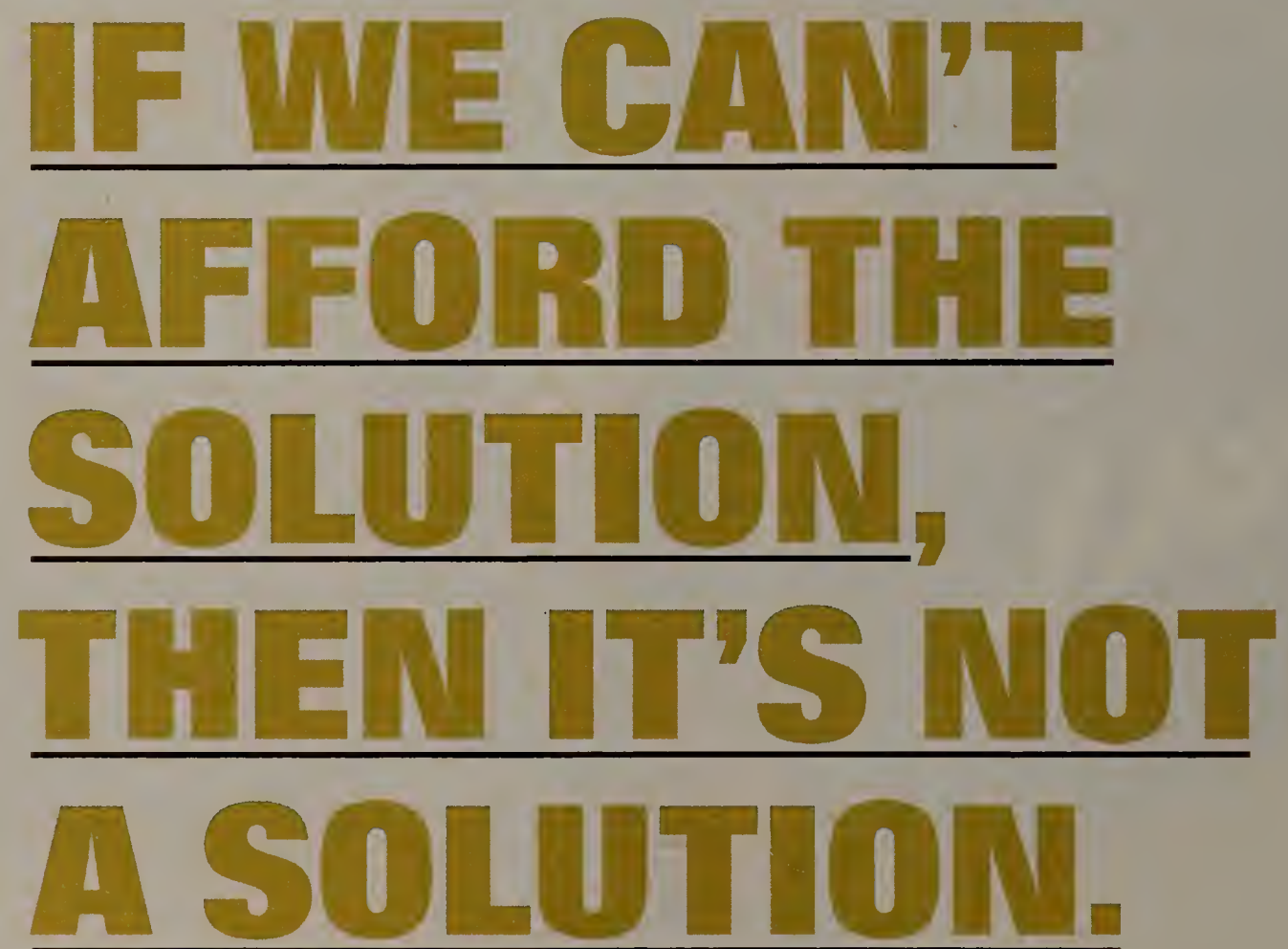
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